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# HIV SEROPREVALENCE IN CALIFORNIA CHILDBEARING WOMEN 1994

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# HIV SEROPREVALENCE IN CALIFORNIA CHILDBEARING WOMEN 1994

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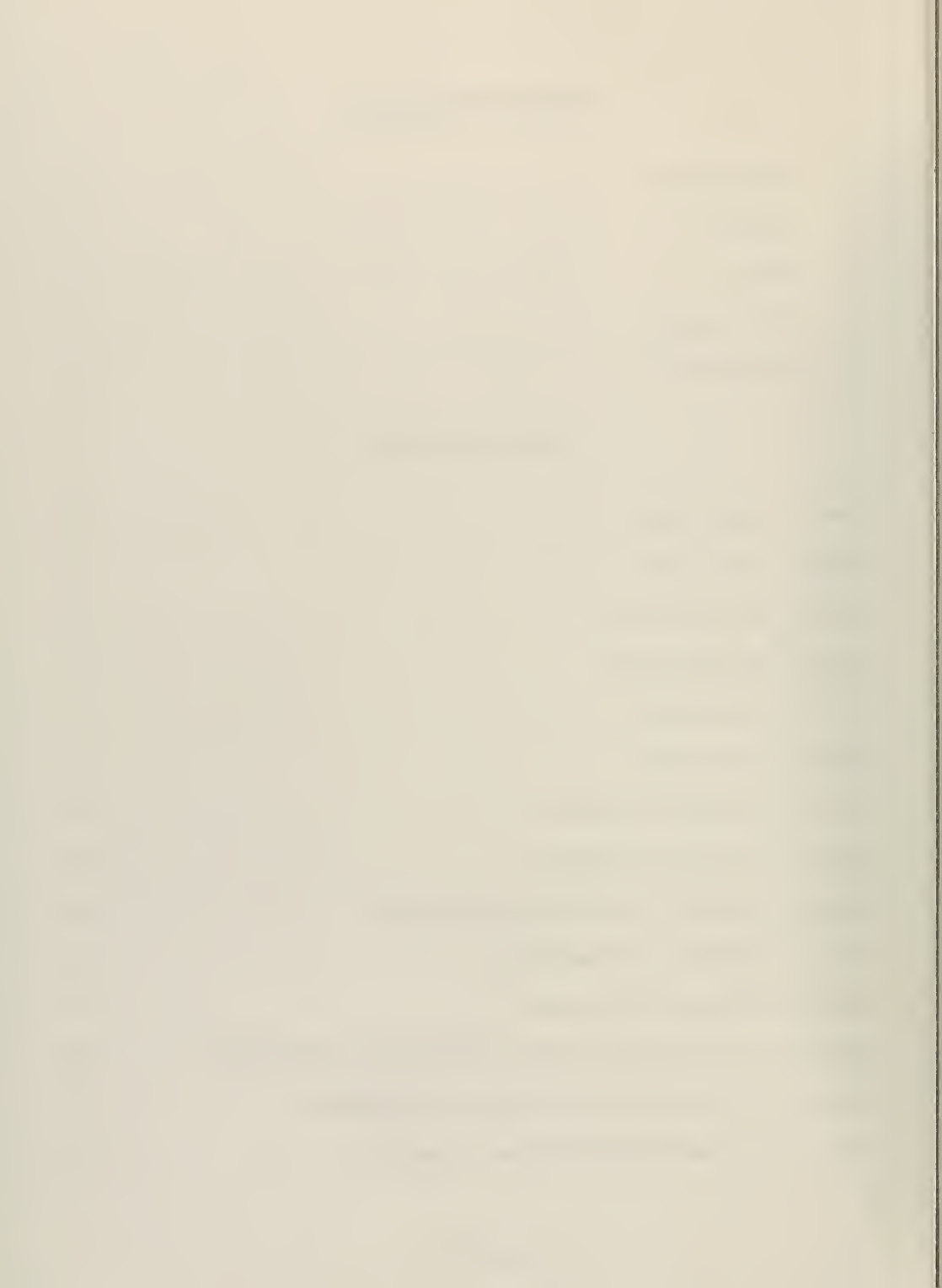


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# **HIV SEROPREVALENCE IN CALIFORNIA CHILDBEARING WOMEN:**

## **A Comparison of the Third Quarters of 1990, 1992, and 1994**

### **I. BACKGROUND**

Human immunodeficiency virus (HIV) infection can be passed from mother to child during pregnancy, labor, and delivery ("perinatal transmission") and by breast-feeding. The maternal immunoglobulin G antibody to HIV is passively transferred across the placenta during pregnancy; thus, it is present in the blood of the newborn at approximately the same concentration as in the mother.<sup>1</sup> Therefore, detection of HIV antibody in the blood of the newborn indicates HIV infection in the mother and that the infant is at risk of infection.<sup>2</sup>

Since 1988, the Centers for Disease Control and Prevention (CDC) and the National Institute of Child Health and Human Development have sponsored a survey to estimate the prevalence of HIV infection among childbearing women. The national survey in childbearing women is conducted each year in 44 states as well as the District of Columbia, Puerto Rico, and the Virgin Islands.<sup>3</sup> The survey is based on the systematic, unlinked testing for HIV antibody of residual blood specimens routinely collected on filter paper from newborn infants for metabolic screening.

The goals of the national survey in childbearing women are to monitor the prevalence of HIV infection among childbearing women and to support the need for targeted prevention efforts and for HIV counseling and testing among women of childbearing age. The data from the national survey are helpful for public health efforts, for example, to estimate the number of children born with HIV infection each year. In 1993, an estimated 6,530 HIV-infected women gave birth in the United States.<sup>4</sup> The estimated mother-to-child transmission rate (based on no maternal zidovudine therapy) is 25% which translates to about 1630 HIV-infected infants born in the United States in 1993.<sup>4</sup>

The California Department of Health Services Office of AIDS, in collaboration with the Genetic Disease Branch (GDB) and the Viral and the Rickettsial Disease Laboratory (VRDL), conducts the survey of childbearing women in California. Each year California samples consecutive births during the 3rd quarter survey period (July, August, and September).

## **II. METHODS**

### **A. Survey Design**

The target population for the survey in childbearing women is all women who deliver infants in California in a given year. Because their HIV serostatus is assessed using specimens collected from newborns, the sampling frame includes all births for which a specimen was submitted for routine newborn metabolic screening. Duplicate and repeat specimens from the same infant are excluded from the survey, and only one specimen from a multiple birth is submitted for HIV testing. The population basis of the survey is complete to the extent that 1) the metabolic screening program obtains specimens from all newborns, and 2) all specimens are of sufficient quantity and quality for HIV antibody testing.<sup>5</sup>

Residual dried-blood specimens collected by heel stick onto filter paper for newborn metabolic screening are tested for HIV antibodies by enzyme immunoassay and Western blot after all personal identifiers have been permanently removed.

### **B. Sampling Considerations**

During each testing year, the sample consists of filter paper specimens from approximately 120,000-160,000 newborn live births in the State for the three month period of July, August, and September. To use these three months' data to estimate annual prevalence rates requires the assumptions that HIV infection in California childbearing women does not vary seasonally and is not increasing rapidly.

### **C. Genetic Disease Screening Program**

In California, city and county health departments are not involved in the genetic disease screening program.<sup>6</sup>

Screening of newborns for genetic diseases is carried out under the direction and supervision of the GDB of the State Department of Health Services. GDB contracts with eight regional laboratories, which receive the blood-impregnated filter paper discs directly from the hospitals of birth at ambient temperature within an average of three days after birth. The regional laboratories perform four screening tests for phenylketonuria, primary congenital hypothyroidism, galactosemia, and hemoglobinopathies.

After metabolic testing at the regional laboratories, the unused filter paper specimens are frozen, batched and shipped monthly to the central facility maintained by the Genetic Disease Laboratory of the GDB for permanent frozen storage. The filter paper specimens are identified by a form number and an accession number but no

demographic data are attached.

#### **D. Demographic Information Collected With Specimens**

No new demographic data beyond those already routinely collected for metabolic screening are being collected for the survey. Demographic records, identified by the same form number and accession number as the filter paper specimens, are entered by the eight regional screening laboratories into the GDB computer system and maintained at a separate location.

A special computer program creates a new unique identification number which reflects the plate number and specific location of the specimen on the plate (well) in which the specimen is to be punched for HIV testing. GDB produces a series of plate maps showing which sample should be punched into which well on which plate.

GDB provides a demographic data file to the State Office of AIDS containing the unique identification number as well as the following items for each specimen selected for testing:

1. Month and year of infant's birth
2. County and city of mother's residence
3. County of birth hospital
4. Age of mother
5. Race of mother
6. Hispanic origin of mother
7. Zip code of mother

#### **E. Testing**

Using the maps from GDB, VRDL labels one circle from each card with the new unique identification number and removes the labeled circle from the card. These circles, called study samples, are bundled in groups corresponding to one test plate. Once the study samples are removed from the cards, the original cards are returned to GDB for storage and the maps linking the accession numbers to the study samples are returned to GDB and shredded. Study samples are punched into plates according to their identification numbers. Wells corresponding to missing and inadequate samples are left blank.

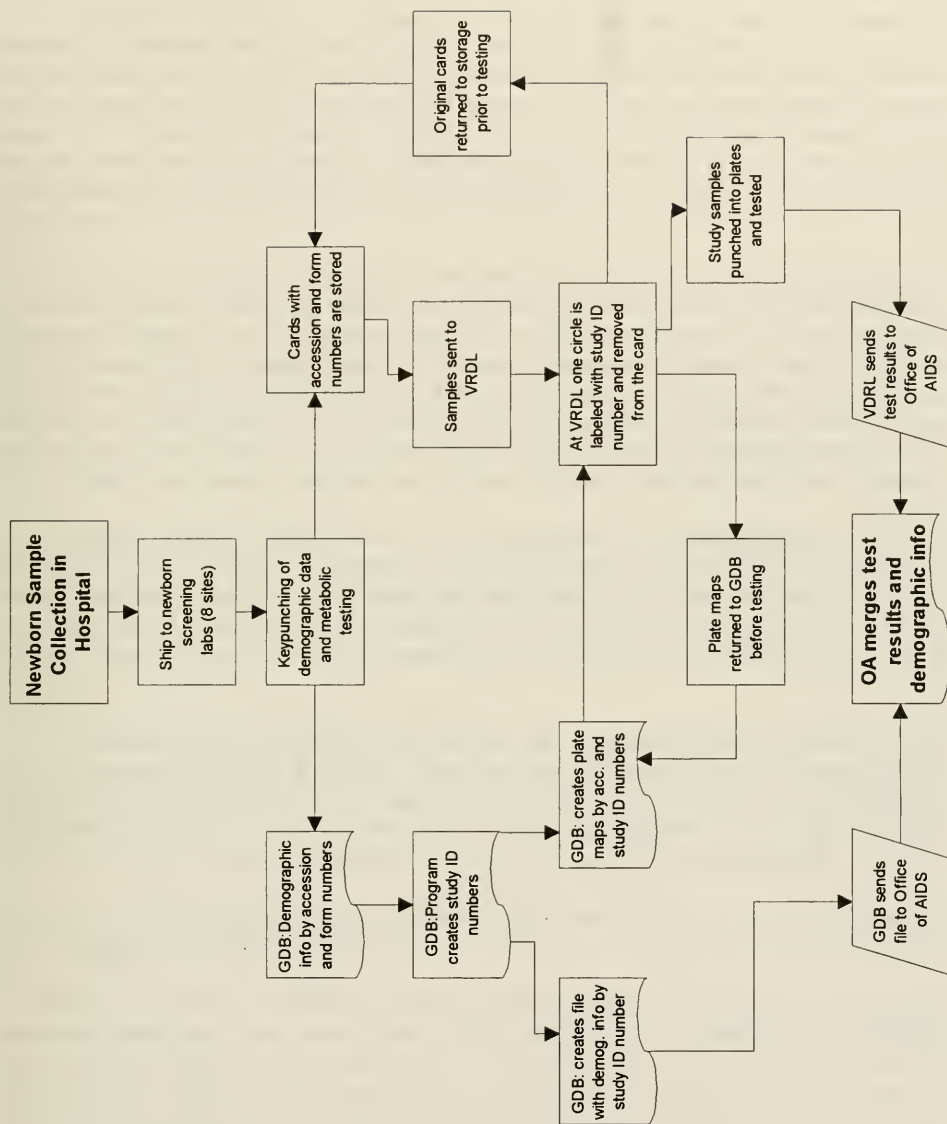
The VRDL performed enzyme-linked immunosorbent assays (EIA) for the presence of HIV antibodies for all 1994 specimens. Repeat and confirmatory testing (mini Western blots) was also performed by the VRDL. Testing was conducted in accordance with the provisions contained in the guidelines distributed by the CDC entitled *Neonatal HIV-1 Laboratory Procedures*, and in the detailed procedures set

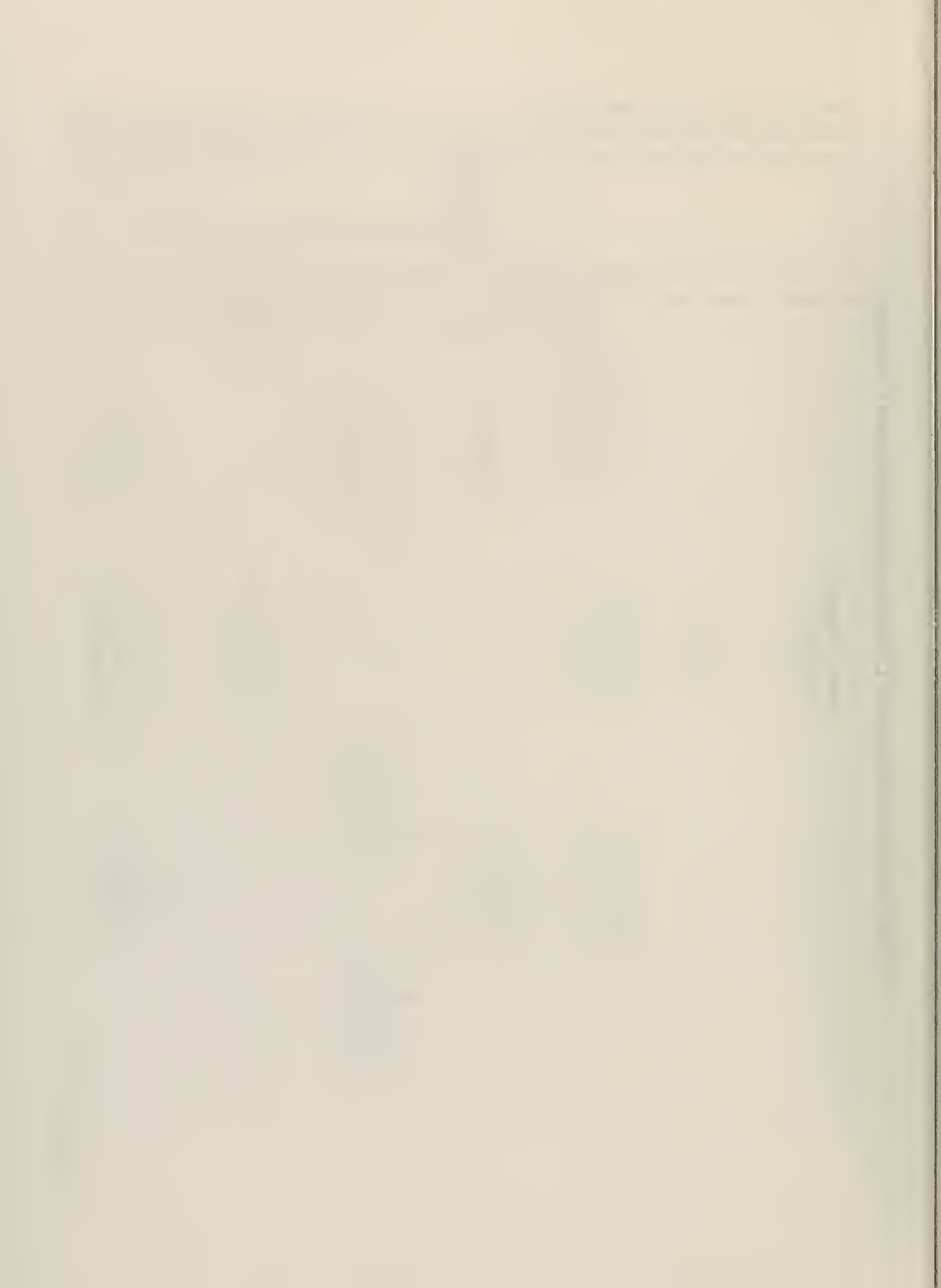
forth in the protocol distributed by the CDC entitled *Serologic Assays for Human Immunodeficiency Virus Antibody in Dried-Blood Specimens Collected on Filter Paper from Neonates* published by the U.S. Department of Health and Human Services in August of 1989.

#### **F. Merging of the Data Files and Analysis**

The Office of AIDS merges the demographic data file from GDB and the test result file from VRDL by unique identification number. SAS version 6.10 was used to produce frequencies and rates by selected demographic variables.

# SCBW Implementation and Operations Management Flowchart







### III. RESULTS

As shown in Table 1 and Figure 1, HIV seroprevalence rates in childbearing women in California ranged from 0.6 per 1,000 in 1989 and 1993 to 0.8 per 1,000 in 1988 and 1991. The trend of HIV infection in California childbearing women remains relatively stable. During the third quarter of 1994, 143,095 specimens were tested. Of these, 105 were HIV antibody positive, or about one in every 1,363 women giving birth in the State for a rate of 0.7 per 1,000. This rate is the same as those recorded for 1990 (0.7 per 1,000) and 1992 (0.7 per 1,000), but is an increase over 1993.

Table 2 and Figure 2 summarize race/ethnicity-specific seroprevalence rates in California in 1990, 1992, and 1994. During the third quarter of each of these years, Latina childbearing women accounted for the largest number of births, (64,490, 70,379, and 66,576 respectively). However, race-specific rates from this survey consistently reveal substantially higher HIV seroprevalence rates in African American women. In 1994, rates were 8 times higher among African American women than white women. However, in 1994, the seroprevalence rates increased among white, Latina, and Other women and decreased among African American, and Asian women.

Shown in Table 3 and Figure 3 are the age-group HIV seroprevalence rates in California in 1990, 1992, and 1994. In 1990 and 1992, seroprevalence was highest among childbearing women with "Unknown" age groups. In 1994, the rate in this age group decreased to 0.0 per 1,000 (zero/550). This significant decrease is due to the efforts made by the GDB staff in making sure that data are reported by the birth hospitals.

When categorized by age of the mother, the largest number of births and HIV positive samples in 1990, 1992, and 1994 were for childbearing women aged 25-29, followed by childbearing women aged 20-24 and 30-34. These three age groups accounted for 76.1%, 79.2%, and 74.1% of all births and 79.2%, 81.2%, and 75.2% of all HIV positive samples in 1990, 1992, and 1994 respectively.

In 1994, age-specific HIV infection rates were highest among childbearing women aged 25-29 and 35 and over.

Shown in Table 4 are the HIV seroprevalence rates in childbearing women by county of residence in the years 1990, 1992, and 1994. For 1994, county-specific seroprevalence rates ranged from 0.0 per 1,000 in 37 counties to 3.4 per 1,000 in Yolo County (Figure 4). In general, HIV seroprevalences were highest among childbearing women from large metropolitan areas. Los Angeles county, where a third of all babies are born, had an HIV infection rate of 1.0 per 1,000 in 1990, decreasing to 0.7 per 1,000 in 1992, and increasing again to 0.9 per 1,000 in 1994.

In terms of geographic spread of HIV seropositive results, there was at least one positive HIV test result recorded in 21 of California's 58 counties in 1994. The highest rates of HIV infection in childbearing women were reported in the following counties:

1990		1992		1994	
Trinity	1/26	Madera	1/273	Yolo	1/298
Nevada	1/220	Alameda	1/352	San Francisco	1/573
Alameda	1/510	San Francisco	1/488	Stanislaus	1/602
San Joaquin	1/776	Kings	1/522	Alameda	1/682
Contra Costa	1/811	Contra Costa	1/815	Butte	1/692
Fresno	1/967	Stanislaus	1/955	Tulare	1/936
Los Angeles	1/1003	Santa Cruz	1/1005	Sacramento	1/947
Santa Clara	1/1165	Fresno	1/1045	Contra Costa	1/1051
San Francisco	1/1219	San Diego	1/1097	Los Angeles	1/1111
Solano	1/1394	San Joaquin	1/1173	San Diego	1/1217

Presented in Table 5 and Figures 5 and 6 are 1990, 1992, and 1994 HIV prevalence rates in childbearing women by region and race/ethnicity and age-group of the mother. Overall, the lowest HIV prevalence rates in 1990, 1992, and 1994 were reported in Southern Metropolitan Counties. Los Angeles and Other Bay Area Counties (1.0 per 1,000) had the highest seroprevalence rate in 1990 compared to San Francisco with the highest (2.0 per 1,000) in 1992 and in 1994 (1.7 per 1,000).

During the third quarter of 1994 childbearing women from Los Angeles represented 32.6 % (46,667/143,095) of the total childbearing women's population in the State and 0.9 per 1,000 (42) were HIV seropositive. In contrast, childbearing women from San Francisco represented 1.6 % (2,293/143,095) of the total childbearing women's population in the State and 1.7 per 1,000 (4) were HIV seropositive.

By regions, the 1994 seroprevalence rates among African American childbearing women in San Francisco (10.8 per 1,000), Other Bay Area (6.2 per 1,000), Southern Metro (4.9 per 1,000), and Los Angeles (3.5 per 1,000) were higher than the other racial/ethnic groups. In these regions, 47% of the HIV seropositive women were African American.

Shown in Table 6 and Figures 7 and 8 are HIV prevalence rates for the years 1990, 1992, and 1994 among childbearing women in Urban/Non-urban regions by race/ethnicity and age-group of the mother. Childbearing women in Urban regions represented 74.6% (112,261) in 1990, 73.9% (111,644) in 1992, and 73.6 %



(105,348) in 1994 of total births. Childbearing women in Non-urban regions represented 25.4% in 1990, 26.1% in 1992, and 26.4% in 1994 of total births. In Urban regions, the overall seroprevalence was unchanged in 1990, 1992, and 1994. In Non-urban regions, the seroprevalence rate increased from 0.4 per 1,000 in 1990 and 1992 to 0.8 per 1,000 in 1994.

In 1990, 1992, and 1994, seroprevalence was highest in African American childbearing women in Urban regions (5.2 per 1,000 in 1990, 4.7 per 1,000 in 1992, and 4.1 per 1,000 in 1994). Eighty percent of all HIV seropositive childbearing women in California resided in Urban regions in 1994. In Urban regions, 39.3 % of the HIV seropositive women were African American compared to 23.8% in Non-urban regions.

In 1994, the seroprevalence ranged from a high of 1.0 per 1,000 among childbearing women aged 25-29 and 35 and over in Urban regions to a low of 0.8 per 1,000 among childbearing women aged less than 20 in Non-urban regions.

#### IV. CONCLUSION

In 1995, the Public Health Service (PHS) issued recommendations for HIV counseling and voluntary testing during pregnancy, for the use of zidovudine to reduce the risk of perinatal HIV transmission, and for prevention of opportunistic infections in infants.<sup>7,8</sup> The major strategies recommended to help prevent perinatal HIV transmission and identifying women and infants in need of care and services included: 1) that health care providers ensure that all pregnant women are routinely counseled and encouraged to be tested for HIV infection; 2) that HIV testing of pregnant women and their infants be voluntary; 3) that women know their HIV status before becoming pregnant; and 4) if the mother's HIV infection status is not known at the time of delivery, that she be encouraged to allow her child to be tested.

On October 13, 1995, Governor Pete Wilson signed into law Senate Bill (SB) 889, (Chapter 873, Statutes of 1995) which requires prenatal care providers to offer HIV counseling and testing to every pregnant woman during prenatal care. In addition this bill requires prenatal care providers to maintain records documenting the offering of 1) HIV information, 2) counseling, and 3) testing to each pregnant woman.

Since the passage of SB 889, the Office of AIDS, Testing Section, has been involved in several activities to inform prenatal care providers about the provisions of the bill. The following is a description of these activities: 1) Alameda County has developed a training curriculum and counseling protocols for prenatal care providers; educational materials; and an evaluation component to assess the effectiveness of the training and educational materials; 2) a letter has been forwarded to all State funded HIV test sites to inform them about the provisions of SB 889; 3) contacts have been made with the Maternal and Child Health division in an effort to provide additional information to their providers statewide; and 4) technical assistance has been provided to the Northeastern California Perinatal Outreach Program in their effort to develop regional guidelines for their providers.

The survey in childbearing women provides critical information for monitoring the HIV epidemic in sexually active women in the United States.<sup>9</sup> The survey also provides unbiased evidence on the extent of vertically acquired pediatric HIV infection. The use of anonymous surveys, in which data are not linked to individual subjects, is a means of obtaining the least biased data on the prevalence of HIV infection without violating rights to confidentiality, informed consent, and counseling that apply to individualized testing.<sup>10</sup>

As noted, results from the survey conducted from 1988 through 1994 indicate that the overall HIV seroprevalence among childbearing women in California has remained relatively stable. Seroprevalence was highest among African American women in 1990, 1992, and 1994. Continuing this trend, rates for 1994 were 8 times

higher among African American women than white women.

In 1994, there were 567,034 live births in California. The HIV seroprevalence rate among childbearing women during the third quarter of 1994 was 0.07337% (105/143,095). Therefore, an estimated 416 ( $567,034 \times 0.07337\%$ ) HIV-infected women gave birth in California in 1994. Assuming a vertical transmission rate of 25%, we estimated that approximately 104 ( $.25 \times 416$ ) infants born in California during 1994 were infected with HIV.

For an HIV-infected child, Hsia et al. estimate direct medical costs of \$9,382 per year before development of AIDS and \$37,928 per year after AIDS development.<sup>11</sup> CDC developed an average profile for a child infected with HIV at birth: no symptoms in the first 9 months of life followed by mild HIV symptoms in months 10-13, moderate symptoms in months 14 to 57, and AIDS development at months 58 to 113 (average life span, 113 months).<sup>12</sup> Because reported medical costs do not differentiate between costs for children with mild versus moderate symptomatic HIV disease, CDC is using the following percentage: 75% of monthly medical costs for mild-symptom months and 125% for moderate-symptom months.<sup>12</sup> Adding these costs over ten years equals \$222,344 per HIV-infected child.

Results from a placebo-controlled, clinical trial (the AIDS Clinical Trials Group [ACTG] protocol number 076) showed that administration of zidovudine (ZDV) to HIV-infected pregnant women and their newborns reduced the risk of perinatal transmission of HIV by approximately two thirds: 25.5% of infants born to mothers in the placebo group were infected, compared with 8.3% of those born to mothers in the ZDV group.<sup>13</sup> The defined regimen involved oral ZDV for infected women during pregnancy, intravenous ZDV for women during labor and delivery, and oral ZDV for HIV-exposed newborns. If the estimated 416 HIV-infected women and their newborns had received ZDV treatment, and assuming a perinatal transmission rate of 8.3%, we estimate that approximately 35 ( $.083 \times 416$ ) infants born in California during 1994 would have been infected with HIV.

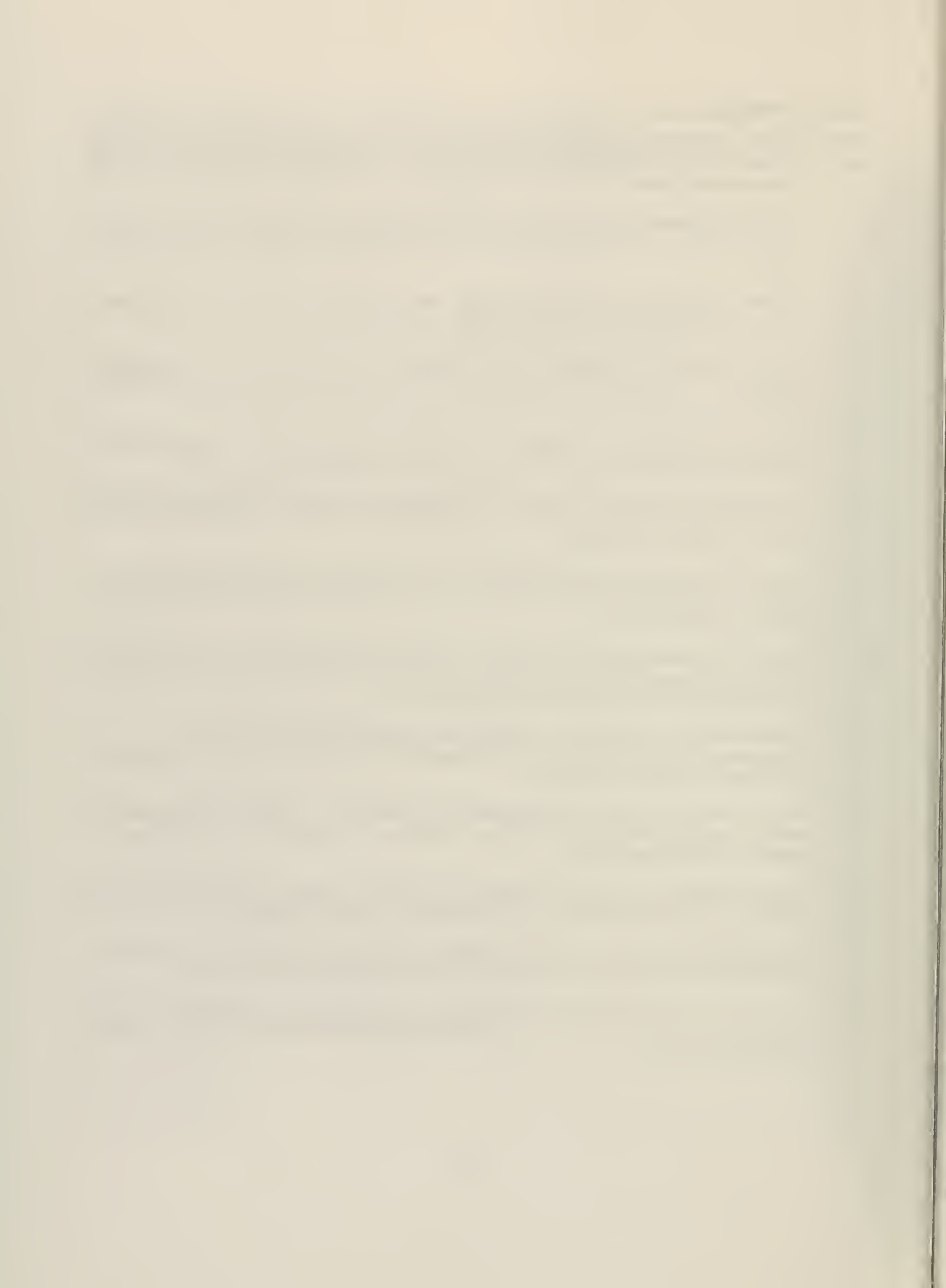
To assess ZDV costs, the following average ZDV treatment costs per person were used: \$551 for maternal treatment during pregnancy; \$46 for maternal treatment during labor and delivery; and \$17 for newborn treatment.<sup>12</sup> Additionally, the costs for laboratory testing during ZDV therapy include 2 chemistry profiles for the mother (\$35 per test), 2 complete blood counts for the mother and one for the infant (\$21 per test). Costs involved in administering intravenous ZDV were not included. Adding these costs for 416 HIV-infected women and 416 HIV-exposed newborns equals \$310,752.

As demonstrated by the presentation in this report, in California the survey has become an important resource for planning HIV prevention, developing care and

treatment programs, and for designing resource allocation. Therefore, the California Department of Health Services, California local health departments, and California community-based organizations call for the continuation of the CDC-funded surveillance of HIV infections among pregnant women and their newborns.

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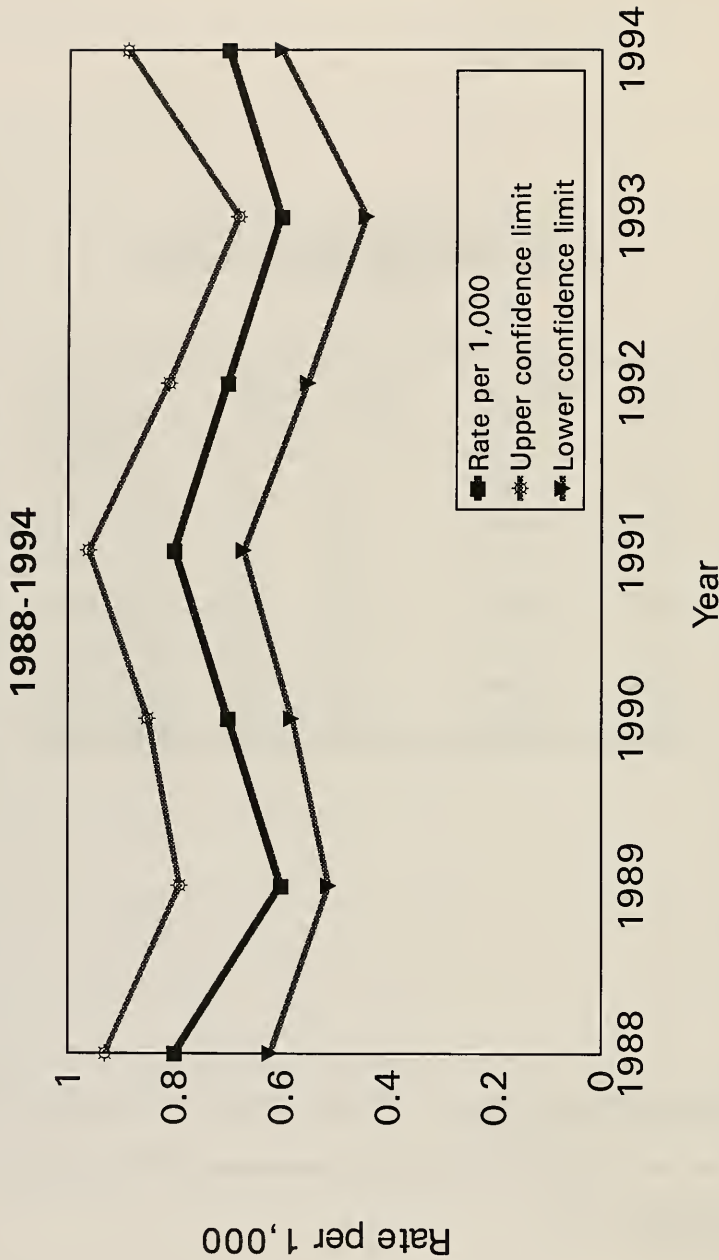
**TABLE 1. HIV SEROPREVALENCE  
IN CALIFORNIA CHILDBEARING WOMEN<sup>1</sup>  
1988 - 1994**

Survey Year	Specimens Tested	Number HIV + <sup>2</sup>	Rate per 1,000	95% Confidence Intervals
1988	131,311	100	0.8	(0.62 - 0.93)
1989	139,569	89	0.6	(0.51 - 0.79)
1990	150,494	106	0.7	(0.58 - 0.85)
1991	154,918	124	0.8	(0.67 - 0.96)
1992	151,033	101	0.7	(0.55 - 0.81)
1993	150,598	83	0.6	(0.44 - 0.68)
1994	143,095	105	0.7	(0.60 - 0.89)

<sup>1</sup>Residual dried-blood specimens collected by heel stick onto filter paper for newborn metabolic screening were tested for HIV antibody, only in the third quarter of each year.

<sup>2</sup>All positive specimens were tested for HIV antibody by enzyme immunoassay and confirmed by Western blot.

**FIGURE 1. HIV SEROPREVALENCE RATES IN CALIFORNIA  
CHILD-BEARING WOMEN**



Note: Residual dried-blood specimens collected by heel stick onto filter paper for newborn metabolic screening were tested for HIV antibody, only in the third quarter of each year.



**TABLE 2. HIV SEROPREVALENCE  
IN CALIFORNIA CHILDBEARING WOMEN<sup>1</sup>  
BY RACE/ETHNICITY  
1990-1992-1994**

Race/Ethnicity	Total Tested	1990 Number HIV + <sup>2</sup>	Rate per 1,000 / 95% C.I.	Total Tested	1992 Number HIV + <sup>2</sup>	Rate per 1,000 / 95% C.I.	Total Tested	1994 Number HIV + <sup>2</sup>	Rate per 1,000 / 95% C.I.
White	59,189	20	0.3 (0.21-0.52)	53,533	18	0.3 (0.20-0.53)	50,889	24	0.5 (0.30-0.70)
African American	11,703	57	4.9 (3.69-6.31)	10,610	47	4.4 (3.26-5.89)	9,828	38	3.9 (2.74-5.30)
Latina	64,490	27	0.4 (0.28-0.61)	70,379	30	0.4 (0.29-0.61)	66,576	38	0.6 (0.40-0.78)
Asian	8,254	1	0.1 (0.00-0.68)	9,697	1	0.1 (0.00-0.57)	9,362	0	0.0
Other <sup>3</sup>	5,180	0	0.0	5,712	3	0.5 (0.11-1.53)	6,342	5	0.8 (0.26-1.84)
Unknown	1,678	1	0.6 (0.00-3.22)	1,102	2	1.8 (0.22-6.54)	98	0	a
<b>Total</b>	<b>150,494</b>	<b>106</b>	<b>0.7</b>	<b>151,033</b>	<b>101</b>	<b>0.7</b>	<b>143,095</b>	<b>105</b>	<b>0.7</b>

<sup>1</sup>Residual dried-blood specimens collected by heel stick onto filter paper for newborn metabolic screening were tested for HIV antibody, only in the third quarter of each year.

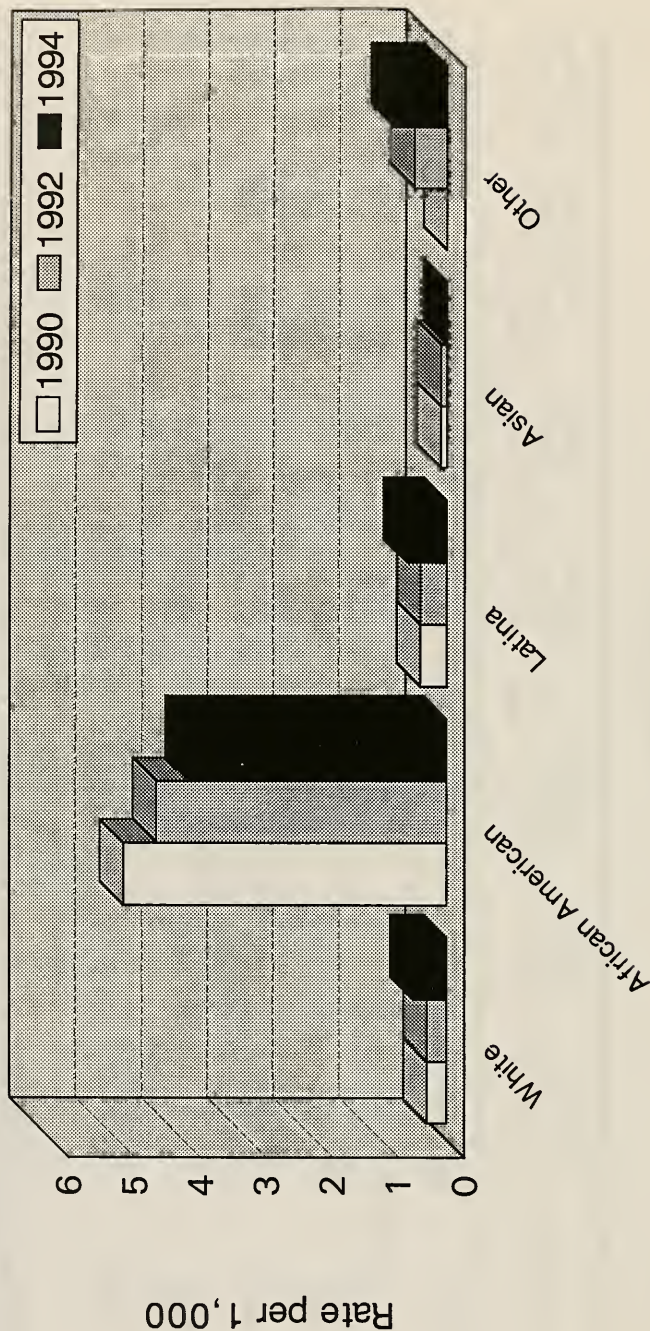
<sup>2</sup>All positive specimens were tested for HIV antibody by enzyme immunoassay and confirmed by Western blot.

<sup>3</sup>Includes Native Americans, Pacific Islanders and mixed races.

<sup>a</sup>Not calculated for fewer than 100 tested.

# HIV SEROPREVALENCE RATES IN CALIFORNIA CHILDBEARING WOMEN, BY RACE/ETHNICITY

1990-1992-1994



Notes: The "Other" category includes Native Americans, Pacific Islanders and mixed races. Excludes unknown race/ethnicity. Residual dried-blood specimens collected by heel stick onto filter paper for newborn metabolic screening were tested for HIV antibody, only in the third quarter of each year.

California Department of Health Services  
 Office of AIDS, March 1996

**TABLE 3. HIV SEROPREVALENCE  
IN CALIFORNIA CHILDBEARING WOMEN<sup>1</sup>  
BY AGE GROUP  
1990-1992-1994**

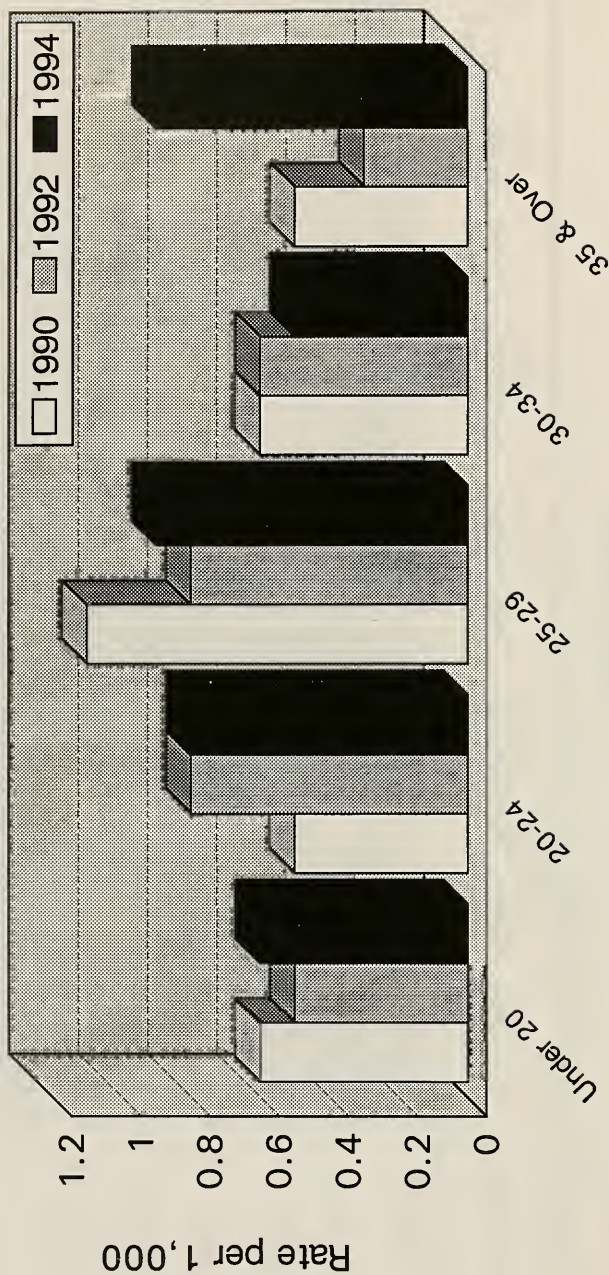
Age Group	Total Tested	1990 Number HIV + <sup>2</sup>	Rate per 1,000/ 95% C.I.	Total Tested	1992 Number HIV + <sup>2</sup>	Rate per 1,000/ 95% C.I.	Total Tested	1994 Number HIV + <sup>2</sup>	Rate per 1,000/ 95% C.I.
Under 20	17,384	10	0.6 (0.28-1.06)	17,728	9	0.5 (0.23-0.96)	18,052	10	0.6 (0.27-1.02)
20-24	38,564	19	0.5 (0.30-0.77)	38,180	30	0.8 (0.53-1.12)	34,603	26	0.8 (0.49-1.10)
25-29	43,960	47	1.1 (0.79-1.42)	42,510	32	0.8 (0.52-1.06)	38,932	36	0.9 (0.65-1.28)
30-34	31,950	18	0.6 (0.33-0.89)	32,866	20	0.6 (0.37-0.94)	32,487	17	0.5 (0.31-0.84)
35 & Over	15,803	8	0.5 (0.22-1.00)	17,550	6	0.3 (0.13-0.74)	18,471	16	0.9 (0.50-1.41)
Unknown	2,833	4	1.4 (0.39-3.61)	2,199	4	1.8 (0.50-4.65)	550	0	0.0
<b>Total</b>	<b>150,494</b>	<b>106</b>	<b>0.7</b>	<b>151,033</b>	<b>101</b>	<b>0.7</b>	<b>143,095</b>	<b>105</b>	<b>0.7</b>

<sup>1</sup>Residual dried-blood specimens collected by heel stick onto filter paper for newborn metabolic screening were tested for HIV antibody, only in the third quarter of each year.

<sup>2</sup>All positive specimens were tested for HIV antibody by enzyme immunoassay and confirmed by Western blot.



**FIGURE 3. HIV SEROPREVALENCE RATES IN CALIFORNIA  
CHILDBEARING WOMEN, BY AGE GROUP  
1990-1992-1994**



Notes: Excludes unknown age group. Residual dried-blood specimens collected by heel stick onto filter paper for newborn metabolic screening were tested for HIV antibody, only in the third quarter of each year.

California Department of Health Services  
Office of AIDS, March 1996

TABLE 4. HIV SEROPREVALENCE  
IN CALIFORNIA CHILDBEARING WOMEN<sup>1</sup>  
BY COUNTY OF RESIDENCE  
1990-1992-1994

County of Residence	1990			1992			1994		
	Total Tested	Number HIV + <sup>2</sup>	Rate per 1,000	Total Tested	Number HIV + <sup>2</sup>	Rate per 1,000	Total Tested	Number HIV + <sup>2</sup>	Rate per 1,000
Alameda	5,612	11	2.0	5,626	16	2.8	5,457	8	1.5
Alpine	4	0	a	4	0	a	0	0	a
Amador	79	0	a	77	0	a	92	0	a
Butte	658	0	0.0	612	0	0.0	692	1	1.4
Calaveras	96	0	a	92	0	a	95	0	a
Colusa	70	0	a	86	0	a	99	0	a
Contra Costa	3,245	4	1.2	3,258	4	1.2	3,154	3	1.0
Del Norte	89	0	a	90	0	a	89	0	a
El Dorado	431	0	0.0	420	0	0.0	388	0	0.0
Fresno	3,869	4	1.0	4,181	4	1.0	3,932	3	0.8
Glenn	102	0	0.0	128	0	0.0	126	0	0.0
Humboldt	440	0	0.0	422	0	0.0	394	0	0.0
Imperial	827	0	0.0	851	0	0.0	823	0	0.0
Inyo	60	0	a	62	0	a	63	0	a
Kern	3,225	0	0.0	3,407	0	0.0	3,186	1	0.3

TABLE 4. (Continued)

County of Residence	1990			1992			1994		
	Total Tested	Number HIV + <sup>2</sup>	Rate per 1,000	Total Tested	Number HIV + <sup>2</sup>	Rate per 1,000	Total Tested	Number HIV + <sup>2</sup>	Rate per 1,000
Kings	490	0	0.0	522	1	1.9	504	0	0.0
Lake	157	0	0.0	162	0	0.0	179	0	0.0
Lassen	75	0	a	79	0	0.0	82	0	a
Los Angeles	52,166	52	1.0	50,561	35	0.7	46,667	42	0.9
Madera	554	0	0.0	545	2	3.7	522	0	0.0
Marin	743	0	0.0	693	0	0.0	716	0	0.0
Mariposa	45	0	a	49	0	a	52	0	a
Mendocino	303	0	0.0	282	0	0.0	270	0	0.0
Merced	1,043	0	0.0	1,078	0	0.0	1,052	0	0.0
Modoc	29	0	a	30	0	a	22	0	a
Mono	34	0	a	32	0	a	32	0	a
Monterey	1,603	1	0.6	1,847	0	0.0	1,749	0	0.0
Napa	331	0	0.0	382	0	0.0	389	0	0.0
Nevada	220	1	4.5	233	0	0.0	179	0	0.0
Orange	12,922	2	0.2	13,072	4	0.3	12,803	3	0.2

TABLE 4. (Continued)

County of Residence	1990			1992			1994		
	Total Tested	Number HIV + <sup>2</sup>	Rate per 1,000	Total Tested	Number HIV + <sup>2</sup>	Rate per 1,000	Total Tested	Number HIV + <sup>2</sup>	Rate per 1,000
Placer	591	0	0.0	665	0	0.0	627	0	0.0
Plumas	41	0	a	48	0	a	104	0	0.0
Riverside	6,258	3	0.5	6,389	2	0.3	6,224	3	0.5
Sacramento	4,607	3	0.7	4,826	2	0.4	4,733	5	1.1
San Benito	191	0	0.0	170	0	0.0	189	0	0.0
San Bernardino	7,993	3	0.4	8,112	2	0.2	7,603	6	0.8
San Diego	11,624	8	0.7	12,068	11	0.9	10,954	9	0.8
San Francisco	2,438	2	0.8	2,442	5	2.0	2,293	4	1.7
San Joaquin	2,330	3	1.3	2,345	2	0.9	2,363	1	0.4
San Luis Obispo	752	0	0.0	715	0	0.0	693	0	0.0
San Mateo	2,369	0	0.0	2,541	2	0.8	2,586	2	0.8
Santa Barbara	1,638	0	0.0	1,606	0	0.0	1,584	1	0.6
Santa Clara	6,990	6	0.9	7,005	4	0.6	6,815	4	0.6
Santa Cruz	1,020	0	0.0	1,005	1	1.0	990	0	0.0
Shasta	579	0	0.0	563	0	0.0	515	0	0.0

TABLE 4. (Continued)

County of Residence	1990		1992		1994	
	Total Tested	Number HIV + <sup>2</sup>	Rate per 1,000	Total Tested	Number HIV + <sup>2</sup>	Rate per 1,000
Sierra	5	0	a	6	0	a
Siskiyou	106	0	0.0	85	0	a
Solano	1,394	1	0.7	1,376	1	0.7
Sonoma	1,452	1	0.7	1,502	0	0.0
Stanislaus	1,986	0	0.0	1,909	2	1.0
Sutter	298	0	0.0	315	0	0.0
Tehama	189	0	0.0	162	0	0.0
Trinity	26	1	a	41	0	a
Tulare	1,846	0	0.0	2,062	0	0.0
Tuolumne	140	0	0.0	128	0	0.0
Ventura	3,287	0	0.0	3,163	1	0.3
Yolo	549	0	0.0	602	0	0.0
Yuba	273	0	0.0	299	0	0.0
Total	150,494	106	0.7	151,033	101	0.7
				143,095	105	0.7

<sup>1</sup>Residual dried-blood specimens collected by heel stick onto filter paper for newborn metabolic screening were tested for HIV antibody, only in the third quarter of each year.

<sup>2</sup>All positive specimens were tested for HIV antibody by enzyme immunoassay and confirmed by Western blot.

\*Not calculated for fewer than 100 tested.



**FIGURE 4.**  
**NUMBER OF HIV POSITIVE**  
**CHILDBEARING WOMEN**  
**BY COUNTY OF RESIDENCE**  
**1994**

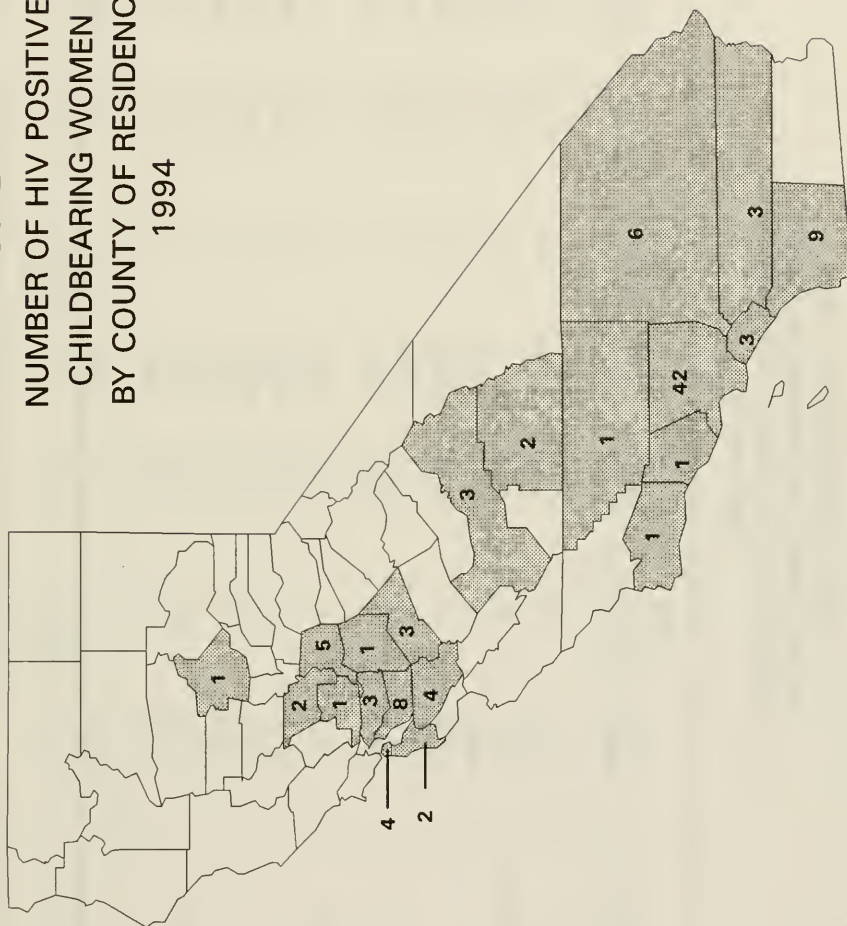


TABLE 5. HIV SEROPREVALENCE  
IN CALIFORNIA CHILDBEARING WOMEN<sup>1</sup>  
BY REGIONS, RACE/ETHNICITY AND AGE GROUP  
1990-1992-1994

Region	Race/Ethnicity Age Group	Total Tested	1990 Number HIV + <sup>2</sup>	Rate per 1,000	Total Tested	1992 Number HIV + <sup>2</sup>	Rate per 1,000	Total Tested	1994 Number HIV + <sup>2</sup>	Rate per 1,000
Los Angeles County	White	12,409	3	0.2	10,484	8	0.8	11,362	8	0.7
	African American	5,403	31	5.7	4,697	11	2.3	4,330	15	3.5
	Latina	29,692	16	0.5	30,590	14	0.5	26,623	19	0.7
	Asian	2,970	1	0.3	2,952	1	0.3	2,841	0	0.0
	Other <sup>5</sup>	1,216	0	0.0	1,545	1	0.6	1,473	0	0.0
	Unknown	476	1	2.1	293	0	0.0	38	0	a
	Under 20	6,272	3	0.5	6,158	3	0.5	5,958	1	0.2
	20-24	13,766	11	0.8	13,019	11	0.8	11,614	8	0.7
	25-29	14,990	27	1.8	14,132	10	0.7	12,813	16	1.2
	30-34	10,813	6	0.6	10,589	6	0.6	10,049	8	0.8
	35 & Over	5,556	3	0.5	5,958	4	0.7	6,034	9	1.5
	Unknown	769	2	2.6	705	1	1.4	199	0	0.0
	Total	52,166	52	1.0	50,561	35	0.7	46,667	42	0.9

TABLE 5. (Continued)

Region	Race/Ethnicity Age Group	Total Tested	1990 Number HIV + <sup>2</sup>	Rate per 1,000	Total Tested	1992 Number HIV + <sup>2</sup>	Rate per 1,000	Total Tested	1994 Number HIV + <sup>2</sup>	Rate per 1,000
San Francisco County	White	663	1	1.5	646	0	0.0	611	1	1.6
	African American	324	0	0.0	312	5	16.0	279	3	10.8
	Latina	608	1	1.6	610	0	0.0	591	0	0.0
	Asian	633	0	0.0	662	0	0.0	652	0	0.0
	Other <sup>5</sup>	115	0	0.0	135	0	0.0	159	0	0.0
	Unknown	95	0	a	77	0	a	1	0	a
	Under 20	181	0	0.0	165	0	0.0	186	0	0.0
	20-24	446	0	0.0	428	0	0.0	397	0	0.0
	25-29	618	1	1.6	639	2	3.1	593	2	3.4
	30-34	625	1	1.6	628	2	3.2	689	0	0.0
	35 & Over	451	0	0.0	446	1	2.2	417	2	4.8
	Unknown	117	0	0.0	136	0	0.0	11	0	a
	Total	2,438	2	0.8	2,442	5	2.0	2,293	4	1.7

TABLE 5. (Continued)

Region	Race/Ethnicity Age Group	Total Tested	1990 Number HIV + <sup>2</sup>	Rate per 1,000	Total Tested	1992 Number HIV + <sup>2</sup>	Rate per 1,000	Total Tested	1994 Number HIV + <sup>2</sup>	Rate per 1,000
Other Bay Area Counties <sup>3</sup>	White	8,911	6	0.7	8,258	2	0.2	9,108	2	0.2
	African American	1,898	10	5.3	1,741	14	8.0	1,924	12	6.2
	Latina	4,806	3	0.6	5,598	4	0.7	6,767	3	0.4
	Asian	1,986	0	0.0	2,168	0	0.0	2,353	0	0.0
	Other <sup>5</sup>	975	0	0.0	1,137	1	0.9	1,674	1	0.6
	Unknown	315	0	0.0	223	2	9.0	22	0	a
	Under 20	1,665	2	1.2	1,701	3	1.8	1,984	2	1.0
	20-24	3,912	3	0.8	3,786	8	2.1	4,284	5	1.2
	25-29	5,609	9	1.6	5,402	7	1.3	5,821	7	1.2
	30-34	4,787	4	0.8	5,029	2	0.4	6,075	2	0.3
26	35 & Over	2,481	1	0.4	2,808	0	0.0	3,596	2	0.6
	Unknown	437	0	0.0	399	3	7.5	88	0	a
	Total	18,891	19	1.0	19,125	23	1.2	21,848	18	0.8

TABLE 5. (Continued)

Region	Race/Ethnicity Age Group	1990			1992			1994		
		Total Tested	Number HIV + <sup>2</sup>	Rate per 1,000	Total Tested	Number HIV + <sup>2</sup>	Rate per 1,000	Total Tested	Number HIV + <sup>2</sup>	Rate per 1,000
San Diego County	White	5,442	2	0.4	4,995	2	0.4	4,239	2	0.5
	African American	753	3	4.0	779	4	5.1	678	0	0.0
	Latina	4,414	3	0.7	5,078	5	1.0	4,914	6	1.2
	Asian	463	0	0.0	594	0	0.0	577	0	0.0
	Other <sup>5</sup>	347	0	0.0	498	0	0.0	535	1	1.9
	Unknown	205	0	0.0	124	0	0.0	11	0	a
	Under 20	1,163	1	0.9	1,270	0	0.0	1,236	2	1.6
	20-24	2,985	2	0.7	3,111	6	1.9	2,665	4	1.5
	25-29	3,476	2	0.6	3,493	2	0.6	3,012	2	0.7
	30-34	2,538	1	0.4	2,667	2	0.7	2,630	0	0.0
	35 & Over	1,211	2	1.7	1,389	1	0.7	1,387	1	0.7
	Unknown	251	0	0.0	138	0	0.0	24	0	a
	Total	11,624	8	0.7	12,068	11	0.9	10,954	9	0.8

TABLE 5. (Continued)

Region	Race/Ethnicity Age Group	1990			1992			1994		
		Total Tested	Number HIV + <sup>2</sup>	Rate per 1,000	Total Tested	Number HIV + <sup>2</sup>	Rate per 1,000	Total Tested	Number HIV + <sup>2</sup>	Rate per 1,000
Southern Metropolitan Counties <sup>4</sup>	White	12,631	5	0.4	11,110	3	0.3	9,959	2	0.2
	African American	1,400	3	2.1	1,295	2	1.5	1,220	6	4.9
	Latina	11,078	0	0.0	12,836	2	0.2	13,149	4	0.3
	Asian	954	0	0.0	1,284	0	0.0	1,305	0	0.0
	Other <sup>5</sup>	840	0	0.0	970	1	1.0	986	0	0.0
	Unknown	270	0	0.0	78	0	a	11	0	a
	Under 20	2,994	1	0.3	3,160	0	0.0	3,277	1	0.3
	20-24	7,276	1	0.1	7,267	2	0.3	6,641	3	0.5
	25-29	8,278	2	0.2	8,107	1	0.1	7,543	3	0.4
	30-34	5,610	2	0.4	5,980	5	0.8	5,950	4	0.7
28	35 & Over	2,349	1	0.4	2,790	0	0.0	3,136	1	0.3
	Unknown	666	1	1.5	269	0	0.0	83	0	a
	Total	27,173	8	0.3	27,573	8	0.3	26,630	12	0.5

TABLE 5. (Continued)

Region	Race/Ethnicity Age Group	1990 Total Tested	1990 Number HIV + <sup>2</sup>	Rate per 1,000	1992 Total Tested	1992 Number HIV + <sup>2</sup>	Rate per 1,000	1994 Total Tested	1994 Number HIV + <sup>2</sup>	Rate per 1,000
Rest of California	White	19,133	3	0.2	18,040	3	0.2	15,610	9	0.6
	African American	1,925	10	5.2	1,786	11	6.2	1,397	2	1.4
	Latina	13,892	4	0.3	15,667	5	0.3	14,532	6	0.4
	Asian	1,248	0	0.0	2,037	0	0.0	1,634	0	0.0
	Other <sup>5</sup>	1,687	0	0.0	1,427	0	0.0	1,515	3	2.0
	Unknown	317	0	0.0	307	0	0.0	15	0	a
	<b>Total</b>	<b>38,202</b>	<b>17</b>	<b>0.4</b>	<b>39,264</b>	<b>19</b>	<b>0.5</b>	<b>34,703</b>	<b>20</b>	<b>0.6</b>
29	Under 20	5,109	3	0.6	5,274	3	0.6	5,411	4	0.7
	20-24	10,179	2	0.2	10,569	3	0.3	9,002	6	0.7
	25-29	10,989	6	0.5	10,737	10	0.9	9,150	6	0.7
	30-34	7,577	4	0.5	7,973	3	0.4	7,094	3	0.4
	35 & Over	3,755	1	0.3	4,159	0	0.0	3,901	1	0.3
	Unknown	593	1	1.7	552	0	0.0	145	0	0.0
	<b>Total</b>	<b>38,202</b>	<b>17</b>	<b>0.4</b>	<b>39,264</b>	<b>19</b>	<b>0.5</b>	<b>34,703</b>	<b>20</b>	<b>0.6</b>

<sup>1</sup>Residual dried-blood specimens collected by heel stick onto filter paper for newborn metabolic screening were tested for HIV antibody, only in the third quarter of each year.

<sup>2</sup>All positive specimens were tested for HIV antibody by enzyme immunoassay and confirmed by Western blot.

<sup>3</sup>Alameda, Contra Costa, Marin, Napa, San Mateo, Santa Clara, Solano, and Sonoma counties.

<sup>4</sup>Orange, Riverside, and San Bernardino counties.

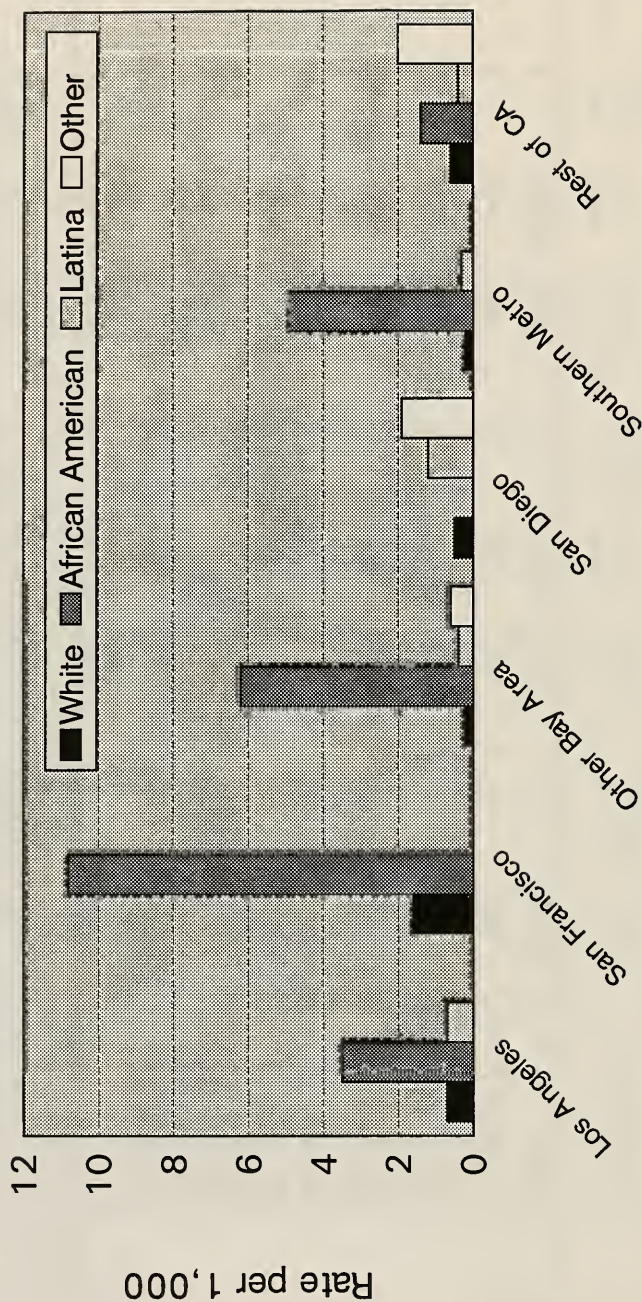
<sup>5</sup>Includes Native Americans, Pacific Islanders and mixed races.

<sup>a</sup>Not calculated for fewer than 100 tested.

California Department of Health Services  
Office of AIDS, March 1996  
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**FIGURE 5. HIV SEROPREVALENCE RATES IN CALIFORNIA  
 CHILDBEARING WOMEN, BY REGIONS AND RACE/ETHNICITY  
 1994**

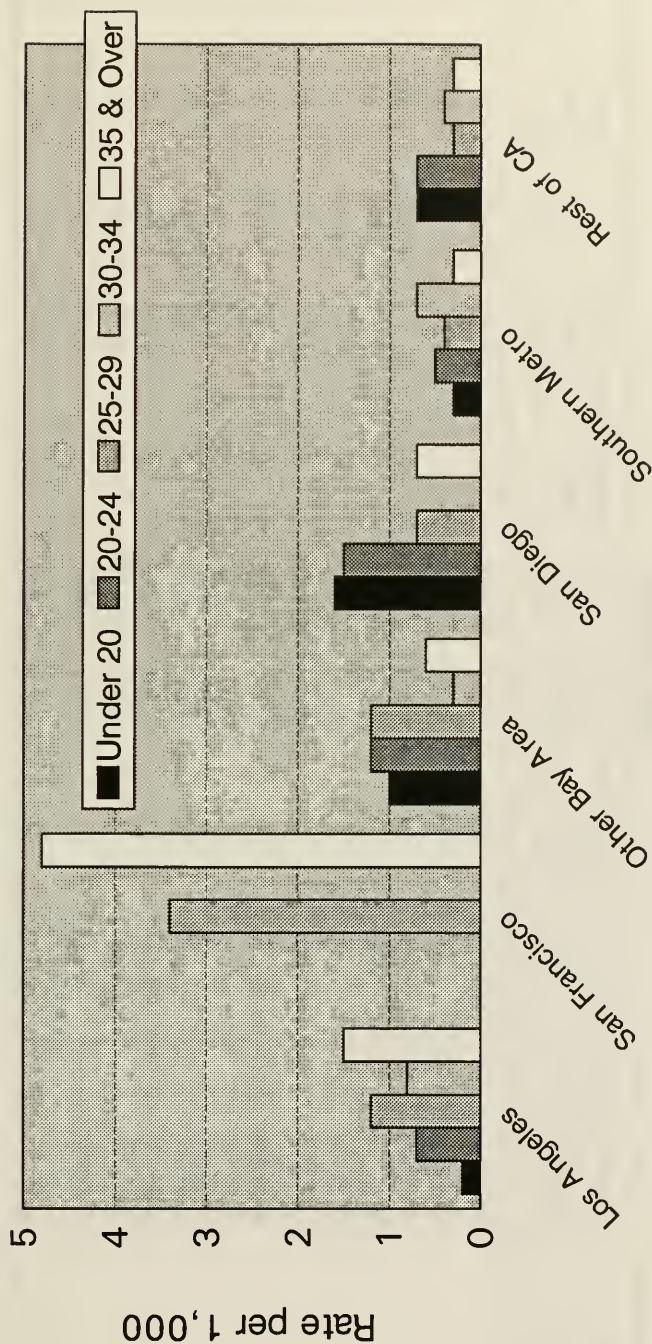


Notes: The "Other" category includes Native Americans, Pacific Islanders and mixed races. Excludes Asian and unknown race/ethnicity. Residual dried-blood specimens collected by heel stick onto filter paper for newborn metabolic screening were tested for HIV antibody, only in the third quarter of each year.

California Department of Health Services  
 Office of AIDS, March 1996



**FIGURE 6. HIV SEROPREVALENCE RATES IN CALIFORNIA  
 CHILDBEARING WOMEN, BY REGIONS AND AGE GROUP  
 1994**



Notes: Excludes unknown age group. Residual dried-blood specimens collected by heel stick onto filter paper for newborn metabolic screening were tested for HIV antibody, only in the third quarter of each year.

TABLE 6. HIV SEROPREVALENCE  
IN CALIFORNIA CHILDBEARING WOMEN<sup>1</sup>  
BY URBAN/NON-URBAN REGIONS, RACE/ETHNICITY AND AGE GROUP  
1990-1992-1994

Urban/ Non-Urban Regions	Race/Ethnicity and Age Group of Mother	1990 Total Tested	1990 Number HIV + <sup>2</sup>	Rate per 1,000	1992 Total Tested	1992 Number HIV + <sup>2</sup>	Rate per 1,000	1994 Total Tested	1994 Number HIV + <sup>2</sup>	Rate per 1,000
Urban <sup>3</sup>	White	40,412	15	0.4	36,350	15	0.4	34,874	17	0.5
	African American	9,818	51	5.2	8,767	41	4.7	8,127	33	4.1
	Latina	49,660	23	0.5	53,339	24	0.4	49,499	32	0.6
	Asian	7,223	1	0.1	7,991	1	0.1	7,888	0	0.0
	Other <sup>5</sup>	3,721	0	0.0	4,403	3	0.7	4,878	2	0.4
	Unknown	1,427	1	0.7	794	2	2.5	82	0	a
	Under 20	12,095	7	0.6	12,259	8	0.7	12,157	5	0.4
	20-24	28,034	18	0.6	27,289	25	0.9	24,640	22	0.9
	25-29	32,915	42	1.3	31,593	26	0.8	28,884	30	1.0
	30-34	24,712	15	0.6	25,287	17	0.7	24,901	12	0.5
	35 & Over	12,333	7	0.6	13,614	6	0.4	14,386	15	1.0
	Unknown	2,172	2	0.9	1,602	4	2.5	380	0	0.0
	Total	112,261	91	0.8	111,644	86	0.8	105,348	84	0.8

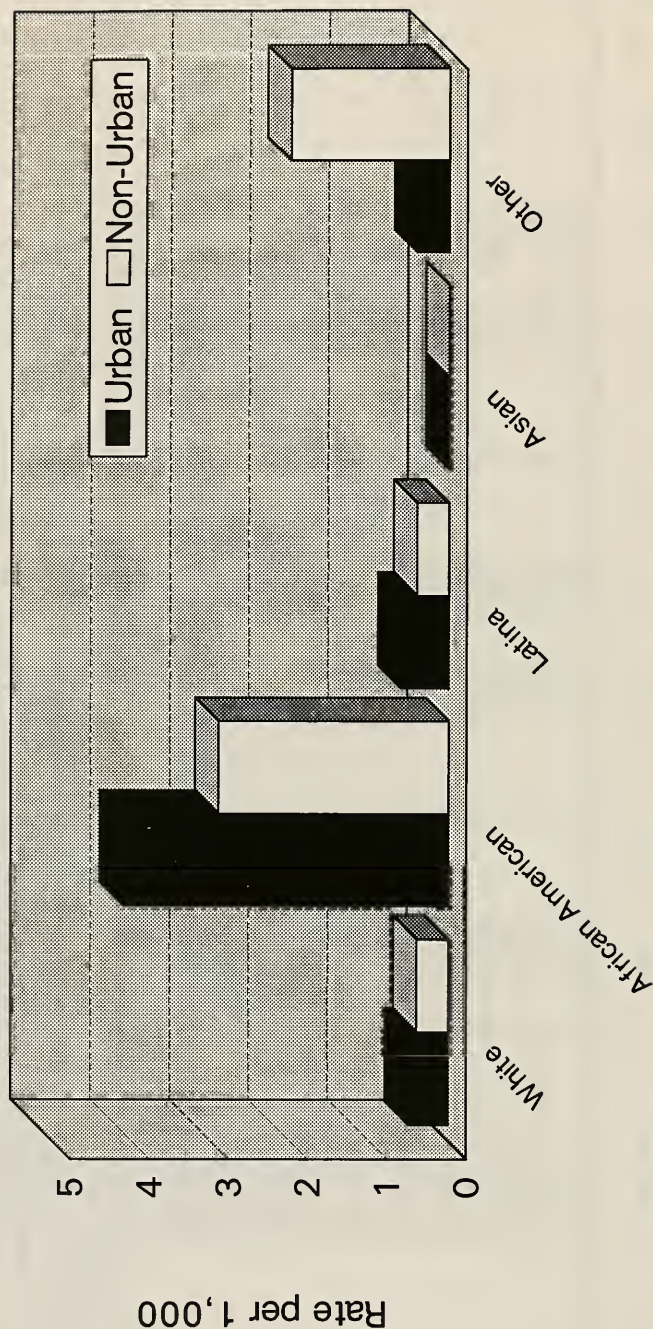
TABLE 6. (Continued)

Urban/ Non-Urban Regions	Race/Ethnicity and Age Group of Mother	Total Tested	1990 Number HIV + <sup>2</sup>	Rate per 1,000	Total Tested	1992 Number HIV + <sup>2</sup>	Rate per 1,000	Total Tested	1994 Number HIV + <sup>2</sup>	Rate per 1,000
Non-Urban <sup>4</sup>	White	18,777	5	0.3	17,183	3	0.2	16,015	7	0.4
	African American	1,885	6	3.2	1,843	6	3.3	1,701	5	2.9
	Latina	14,830	4	0.3	17,040	6	0.4	17,077	6	0.4
	Asian	1,031	0	0.0	1,706	0	0.0	1,474	0	0.0
	Other <sup>5</sup>	1,459	0	0.0	1,309	0	0.0	1,464	3	2.0
	Unknown	251	0	0.0	308	0	0.0	16	0	a
	Under 20	5,289	3	0.6	5,469	1	0.2	5,895	5	0.8
	20-24	10,530	1	0.1	10,891	5	0.5	9,963	4	0.4
	25-29	11,045	5	0.5	10,917	6	0.5	10,048	6	0.6
	30-34	7,238	3	0.4	7,579	3	0.4	7,586	5	0.7
	35 & Over	3,470	1	0.3	3,936	0	0.0	4,085	1	0.2
	Unknown	661	2	3.0	597	0	0.0	170	0	0.0
	Total	38,233	15	0.4	39,389	15	0.4	37,747	21	0.6

<sup>1</sup> Residual dried-blood specimens collected by heel stick onto filter paper for newborn metabolic screening were tested for HIV antibody, only in the third quarter of each year.<sup>2</sup> All positive specimens were tested for HIV antibody by enzyme immunoassay and confirmed by Western blot.<sup>3</sup> Alameda, Contra Costa, Los Angeles, Marin, Orange, Riverside, Sacramento, San Diego, San Francisco, Santa Clara, and Ventura counties.<sup>4</sup> Remaining counties.<sup>5</sup> Includes Native Americans, Pacific Islanders and mixed races.<sup>\*</sup> Not calculated for fewer than 100 tested.



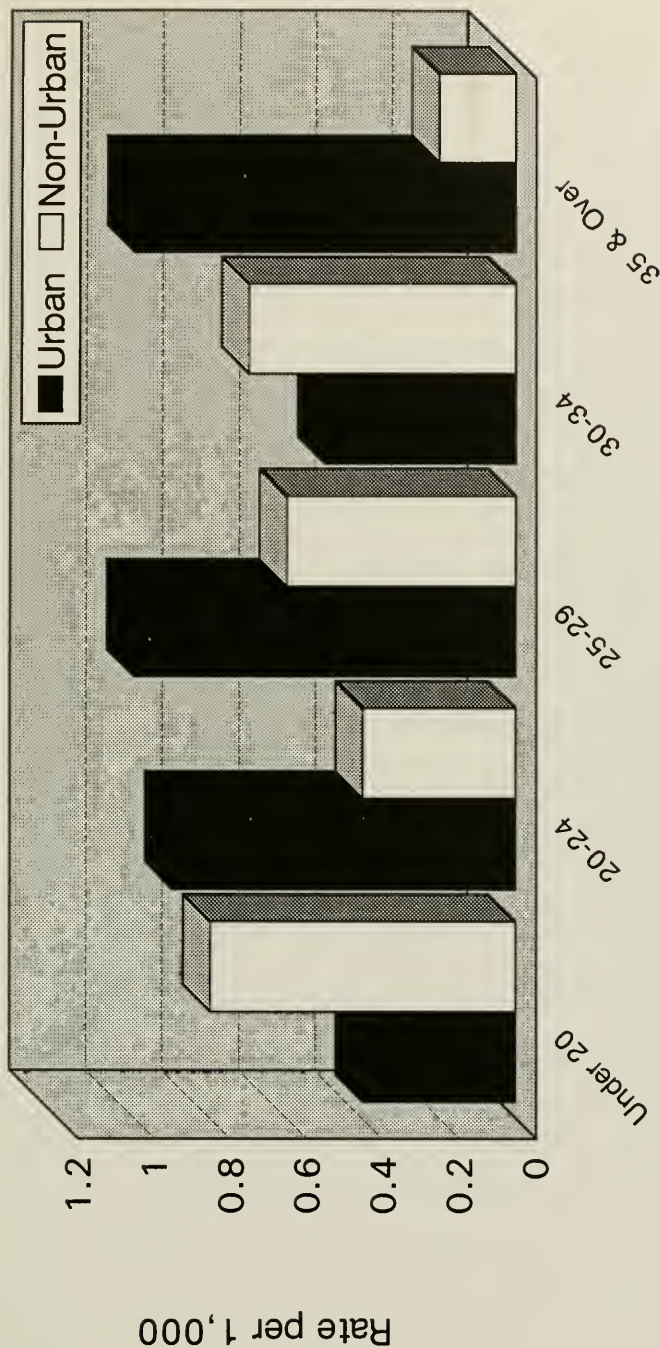
**FIGURE 7. HIV SEROPREVALENCE RATES IN CALIFORNIA CHILDBEARING WOMEN, BY URBAN/NON-URBAN REGIONS AND RACE/ETHNICITY**  
**1994**



Notes: The "Other" category includes Native Americans, Pacific Islanders and mixed races. Excludes unknown race/ethnicity. Residual dried-blood specimens collected by heel stick onto filter paper for newborn metabolic screening were tested for HIV antibody, only in the third quarter of each year.

California Department of Health Services  
Office of AIDS, March 1996

**FIGURE 8. HIV SEROPREVALENCE RATES IN CALIFORNIA CHILDBEARING  
WOMEN BY URBAN/NON-URBAN REGIONS AND AGE GROUP  
1994**



Notes: Excludes unknown age group. Residual dried-blood specimens collected by heel stick onto filter paper for newborn metabolic screening were tested for HIV antibody, only in the third quarter of each year.







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# HIV SEROPREVALENCE IN CALIFORNIA CHILDBEARING WOMEN 1995



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Governor  
State of California

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Director

Department of Health Services

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## DEPARTMENT OF HEALTH SERVICES

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TO: INTERESTED PARTIES

SUBJECT: HIV SEROPREVALENCE IN CALIFORNIA CHILDBEARING WOMEN,  
1995

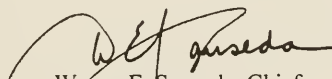
I am pleased to make available to you a report on seroprevalence of human immunodeficiency virus (HIV) among California's childbearing women. The data in this report was gathered in July, August, and September of 1995 in collaboration with the Genetic Disease Branch and the Viral and Rickettsial Disease Laboratory.

The HIV Survey of Childbearing Women (SCBW) was conducted from 1988 through 1995 to track HIV infection in childbearing women. This survey was the only national population-based HIV seroprevalence survey providing data on the extent of the magnitude, distribution, and trends of HIV infection in childbearing women.

I hope you find the data useful in your local HIV serosurveillance activities as well as the community HIV prevention planning process. The SCBW provided valuable information for HIV Prevention Community Planning activities, for health care resource planning, and for directing and evaluating health care services for women and children.

In May 1995, in light of the new prevention and treatment opportunities, as well as concerns over the ethics of an "unlinked" survey, the Assistant Secretary for Health requested that the survey be suspended pending further evaluation. In July 1995, the Centers for Disease Control and Prevention and the Public Health Service recommended that all pregnant women in the United States be offered HIV counseling and voluntary testing.

If you have any questions about this report, please contact Juan D. Ruiz, M.D., Dr.P.H. at (916) 324-8441.

  
Wayne E. Sauseda, Chief  
Office of AIDS

Enclosure





# HIV SEROPREVALENCE IN CALIFORNIA CHILDBEARING WOMEN 1995

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## ACKNOWLEDGMENTS

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We would like to thank the following people in the Genetic Disease Branch for providing dried-blood specimens and a demographic data file, and for sharing their time and expertise during the development of this project: George C. Cunningham, M.D., M.P.H., Chief, Genetic Disease Branch; Fred Lorey, Ph.D., Chief, Program Evaluation and Development; Corinna Tempelis, M.P.H., Genetic Disease Program Specialist; Terry Kennedy, Genetic Disease Program Specialist; Daniel Morales, Ph.D., Chief, Genetic Disease Laboratory; and Wayne Nelson, Senior Programmer Analyst.

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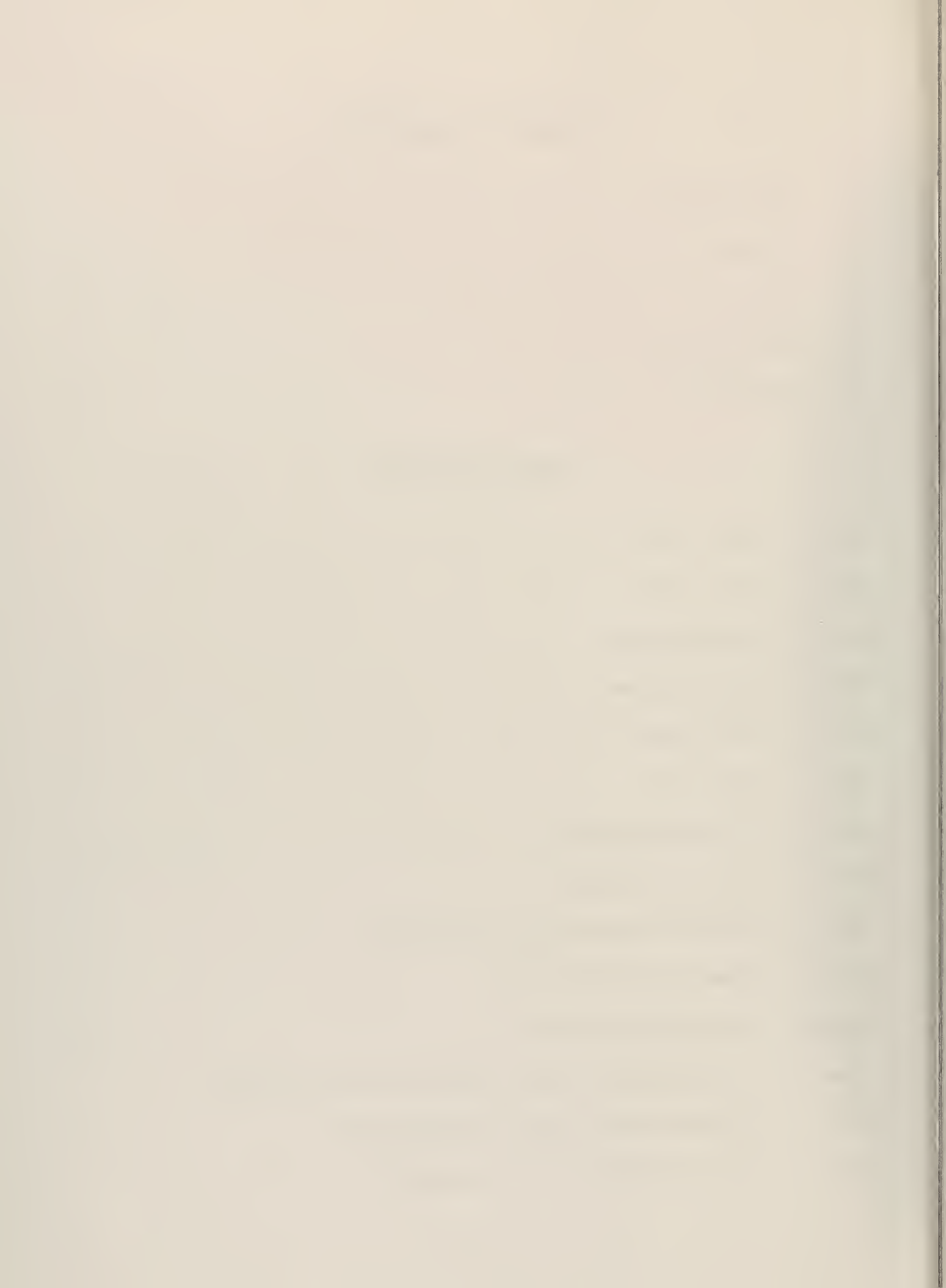


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# **HIV SEROPREVALENCE IN CALIFORNIA CHILDBEARING WOMEN:**

## **A Comparison of Data from the Third Quarters of 1993, 1994, and 1995**

### **I. BACKGROUND**

Human immunodeficiency virus (HIV) infection can be passed from mother to child during pregnancy, labor, and delivery ("perinatal transmission") and by breast-feeding. Perinatal transmission currently accounts for 90% of U.S. pediatric acquired immunodeficiency syndrome (AIDS) cases. The maternal immunoglobulin G antibody to HIV is passively transferred across the placenta during pregnancy; thus, it is present in the blood of the newborn at approximately the same concentration as in the mother<sup>1</sup>. Detection of HIV antibody in the blood of the newborn indicates HIV infection of the mother and that the infant is at risk of infection<sup>2</sup>.

Since 1988, the Centers for Disease Control and Prevention (CDC) have directed multi-state, population-based HIV seroprevalence studies among women of childbearing age. The national survey in childbearing women has been conducted each year in 44 states as well as the District of Columbia, Puerto Rico, and the Virgin Islands<sup>3</sup>. The survey is based on the systematic, unlinked testing for HIV antibody with residual blood specimens routinely collected on filter paper for metabolic screening from newborn infants.

The goals of the national survey in childbearing women are to monitor the prevalence of HIV infection among childbearing women and to support the need for targeted prevention efforts and for HIV counseling and testing among women of childbearing age. The data from the national survey are helpful for public health efforts, for example, estimating the number of children born with HIV infection each year. In 1989, an estimated 1.5 per 1,000 women of childbearing age were infected with HIV<sup>2</sup>. The prevalence of HIV infection among women doubled from 1986 to 1992<sup>4</sup>. In 1993, approximately 6,530 HIV-infected women gave birth in the United States<sup>5</sup>. With a projected perinatal HIV transmission prevalence of 25% (based on no maternal zidovudine therapy), an estimated 1,630 of their infants were HIV-infected.

The California Department of Health Services Office of AIDS, in collaboration with the Genetic Disease Branch (GDB) and the Viral and Rickettsial Disease Laboratory (VRDL), conduct the survey of childbearing women in California. Each year California collects data on consecutive births during the 3rd quarter (July, August, and September).

## **II. METHODS**

### **A. Survey Design**

The target population for the survey of childbearing women in California is all women who deliver in a given year. Because the mother's HIV serostatus is assessed using specimens collected from newborns, the sampling frame includes all live births for which a specimen was submitted for routine newborn metabolic screening. Duplicate and repeat specimens from the same infant are excluded from the survey, and only one specimen from multiple births is submitted for HIV testing. The population basis of the survey is complete to the extent that 1) the metabolic screening program obtains specimens from all newborns, and 2) all specimens are of sufficient quantity and quality for HIV antibody testing<sup>3</sup>.

Residual dried-blood specimens collected by heel stick onto filter paper for newborn metabolic screening are tested for HIV antibodies by enzyme immunoassay and Western blot after all personal identifiers have been permanently removed.

### **B. Sampling Considerations**

During each testing year, the sample consists of filter paper specimens from approximately 130,000-155,000 live births in the State for the three month period of July, August, and September. Estimation of annual prevalence assumes that HIV infection in California childbearing women does not vary seasonally and is not increasing rapidly.

### **C. Genetic Disease Screening Program**

In California, city and county health departments are not involved in the genetic disease screening program<sup>6</sup>. Screening of newborns for genetic diseases is carried out under the direction and supervision of the GDB of the State Department of Health Services. GDB contracts with eight regional laboratories, which receive the blood-impregnated filter paper discs at ambient temperature directly from the hospitals of birth within an average of three days after birth. The regional laboratories perform four screening tests for phenylketonuria, primary congenital hypothyroidism, galactosemia, and hemoglobinopathies.

After metabolic testing at the regional laboratories is conducted, the unused filter paper specimens are frozen, batched and shipped monthly to the central facility maintained by the Genetic Disease Laboratory of the GDB for permanent frozen storage. The filter paper specimens are identified by a form number and an accession number but no demographic data are attached.

#### **D. Demographic Information Collected With Specimens**

No new demographic data beyond those already routinely collected for metabolic screening (see below) are collected for the survey. Demographic records, identified by the same form number and accession number as the filter paper specimens, are entered by the eight regional screening laboratories into the GDB computer system and maintained at a separate location.

A computer program creates a new unique identification number which reflects the plate number and specific location of the specimen on the plate (well) in which the specimen is to be punched for HIV testing. GDB produces a series of plate maps showing which samples should be punched into which wells on which plates.

GDB provides a demographic data file to the State Office of AIDS containing the unique identification number as well as the following information for each specimen selected for testing:

1. Month and year of infant's birth
2. County and city of mother's residence
3. County of birth hospital
4. Age of mother
5. Race of mother
6. Hispanic origin of mother
7. Zip code of mother

#### **E. Testing**

Using the maps from GDB, VRDL labels one circle from each card with the new unique identification number and removes the labeled circle from the card. These circles, called study samples, are bundled in groups corresponding to one test plate. Once the study samples are removed from the cards, the original cards are returned to GDB for storage and the maps linking the accession numbers to the study samples are returned to GDB and shredded. Study samples are punched into plates according to their identification numbers. Wells corresponding to missing and inadequate samples are left blank.

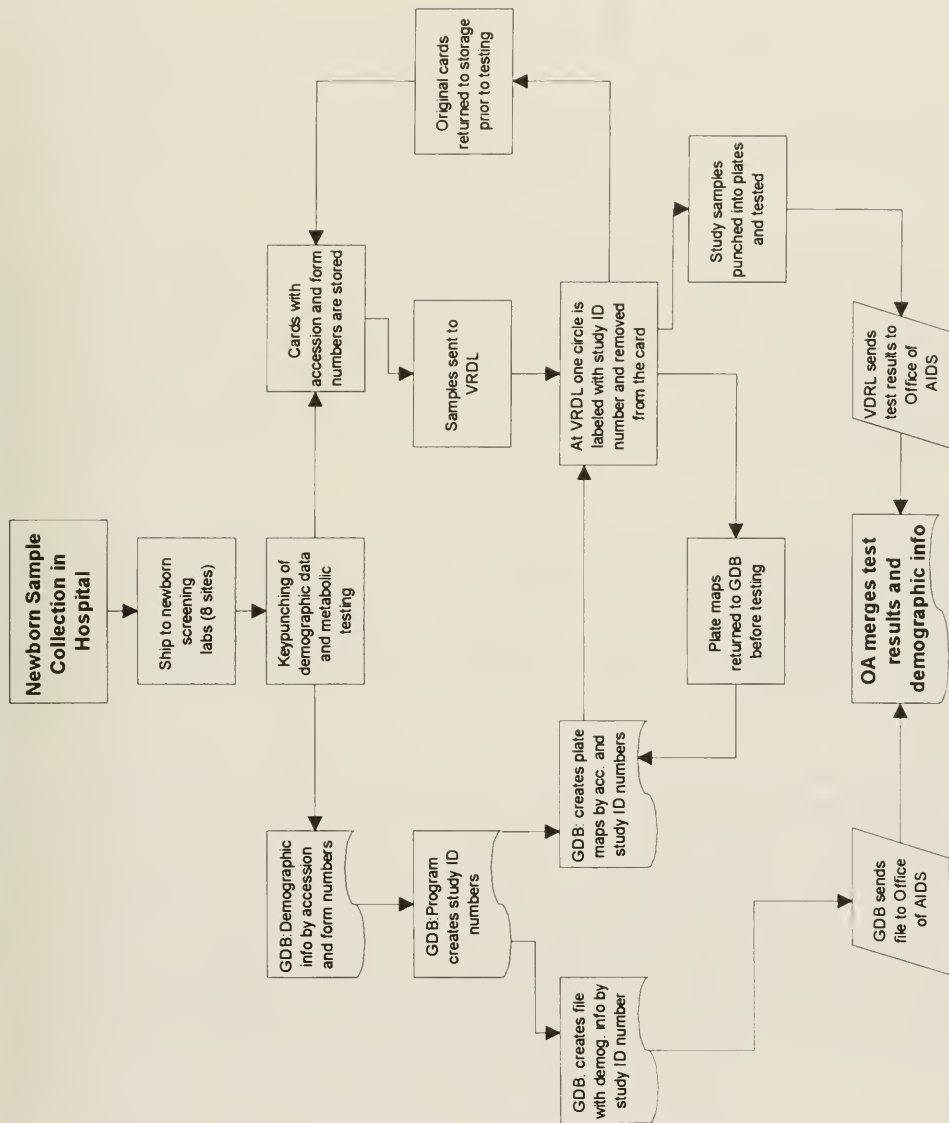
The VRDL performed enzyme-linked immunosorbent assays (EIA) for the presence of HIV antibodies for all 1995 specimens. Repeat and confirmatory testing (mini Western blots) was also performed by the VRDL. Testing was conducted in accordance with the provisions contained in the guidelines distributed by the CDC entitled *Neonatal HIV-1 Laboratory Procedures*, and in the detailed procedures set forth in the protocol distributed by the CDC entitled *Serologic Assays for Human Immunodeficiency Virus Antibody in Dried-Blood Specimens Collected on Filter Paper from Neonates* published

by the U.S. Department of Health and Human Services in August of 1989.

#### **F. Merging of the Data Files and Analysis**

The Office of AIDS merges the demographic data file from GDB and the test result file from VRDL by unique identification number. SAS version 6.10 was used to produce frequencies and seroprevalences by selected demographic variables.

# SCBW Implementation and Operations Management Flowchart







### III. RESULTS

As shown in Table 1 and Figure 1, HIV seroprevalences in childbearing women in California ranged from 0.6 per 1,000 from 1989, 1993, and 1995 to 0.8 per 1,000 in 1988 and 1991. The trend of HIV infection in California childbearing women remained relatively stable. During the third quarter of 1995, 135,991 specimens were tested. Of these, 88 were HIV antibody positive, or about one in every 1,545 women giving birth in the State at a rate of 0.6 per 1,000. This seroprevalence is the same as that calculated for 1993 (0.6 per 1,000), but is a decrease from 1994.

Table 2 and Figure 2 summarize race/ethnicity-specific HIV seroprevalences in California from 1993, 1994, and 1995. During the third quarter of each of these years, Latina childbearing women accounted for the largest number of births (72,263, 66,576, and 67,570 respectively). However, race-specific seroprevalences consistently reveal substantially higher HIV seroprevalences among African American women. In 1995, seroprevalences were seven times higher among African American women than white women. However, in 1995, the HIV seroprevalence increased among Latina women and decreased among white, African American, and "other" women.

Shown in Table 3 and Figure 3 are the age-group HIV seroprevalences in California from 1993, 1994, and 1995. In 1995, age-specific HIV seroprevalences were highest among childbearing women aged 20-24. In 1995, seroprevalence among women with "unknown" age group remained at 0.0 per 1,000 (zero/56). The decrease in the number of women with "unknown" age was due to the efforts made by the GDB staff in making sure that demographic data was reported by the birth hospitals.

Shown in Table 4 are the HIV seroprevalences in childbearing women by county of residence from the years 1993, 1994, and 1995. For 1995, county-specific seroprevalences ranged from 0.0 per 1,000 in 43 counties to 2.8 per 1,000 in San Francisco City and County (Figure 4). In general, HIV seroprevalences were highest among childbearing women from large metropolitan areas. In Los Angeles county, where a third of all babies were born, an HIV seroprevalence of 0.7 per 1,000 was found in 1993, increasing to 0.9 per 1,000 in 1994, and to 1.0 per 1,000 in 1995. In terms of the geographic spread of HIV seropositive results, there was at least one positive HIV test result recorded in 15 of California's 58 counties in 1995. The highest HIV seroprevalences in childbearing women were reported in the following counties:

1993		1994		1995	
<i>County</i>	<i>Prevalence per 1,000</i>	<i>County</i>	<i>Prevalence per 1,000</i>	<i>County</i>	<i>Prevalence per 1,000</i>
San Francisco	2.1	Yolo	3.4	San Francisco	2.8
Yolo	1.6	San Francisco	1.7	Alameda	1.7
Sonoma	1.4	Stanislaus	1.7	San Luis Obispo	1.5
Sacramento	1.0	Alameda	1.5	Sacramento	1.1
Contra Costa	0.9	Butte	1.4	Los Angeles	1.0

Presented in Table 5 and Figures 5 and 6 are 1993, 1994, and 1995 HIV seroprevalences in childbearing women by region and race/ethnicity and age-group of the mother. Overall, the lowest HIV seroprevalences in 1993, 1994, and 1995 were reported in Southern Metropolitan Counties and Rest of California. San Francisco had the highest seroprevalence in 1993 (2.1 per 1,000) and 1995 (2.8 per 1,000).

During the third quarter of 1995 childbearing women from Los Angeles represented 30.9 % (41,989/135,991) of the total childbearing women population in the State and 1.0 per 1,000 (40) were HIV seropositive. In contrast, childbearing women from San Francisco represented 1.6% (2,174/135,991) of the total childbearing women population in the State and 2.8 per 1,000 (6) were HIV seropositive.

In Los Angeles county there was a significant decrease in white women giving birth between 1994 and 1995 (11,362 vs. 7,542). We are not sure about the reasons for this differential loss in Los Angeles white women in 1995. In the third quarter of 1995, there were 4,230 births in Los Angeles that were not included in the survey because of missing or insufficient blood samples, and 1,038 of these were among white childbearing women.

By regions, the 1995 HIV seroprevalences among African American childbearing women in San Francisco (9.0 per 1,000), Rest of California (4.5 per 1,000), Other Bay Area (2.9 per 1,000), Los Angeles (2.7 per 1,000), San Diego (1.6 per 1,000), and Southern Metropolitan Counties (0.9 per 1,000) were higher than the other racial/ethnic groups. In these regions, 28.4% of the HIV seropositive women were African American.

Shown in Table 6 and Figures 7 and 8 are HIV seroprevalences for the years 1993, 1994, and 1995 among childbearing women in Urban/Non-urban regions by race/ethnicity and age-group of the mother. Childbearing women in Urban regions represented 73.9% (111,315) in 1993, 73.6% (105,348) in 1994, and 73.0%

(99,251) in 1995 of total births. Childbearing women in Non-urban regions represented 26.1% in 1993, 26.4% in 1994, and 27.0% in 1995 of total births. In Urban regions, the HIV seroprevalence increased from 0.6 per 1,000 in 1993 to 0.8 per 1,000 in 1994 and 1995. In Non-urban regions, the seroprevalence increased from 0.4 per 1,000 in 1993 to 0.6 per 1,000 in 1994, and decreased to 0.3 per 1,000 in 1995.

In 1993, 1994, and 1995, seroprevalence was highest in African American childbearing women in Urban regions (2.9 per 1,000 in 1993, 4.1 per 1,000 in 1994, and 3.1 per 1,000 in 1995). Eighty-six percent of all HIV seropositive childbearing women in California resided in Urban regions in 1995. In 1995, in Urban regions, 28.9 % of the HIV seropositive women were African American compared to 25.0% in Non-urban regions.

In 1995, seroprevalence was highest among childbearing women aged 20-24 (1.0 per 1,000) in Urban regions and 0.4 per 1,000 among childbearing women aged 20-24 and 30-34 in Non-urban regions.

#### IV. CONCLUSIONS

The survey in childbearing women provides critical information for monitoring the HIV epidemic in sexually active women in the United States<sup>7</sup>. The survey also provides unbiased evidence on the extent of vertically acquired pediatric HIV infection. The use of anonymous surveys, in which data are not linked to individual subjects, is a means of obtaining the least biased data on the prevalence of HIV infection without violating rights to confidentiality, informed consent, and counseling that apply to individualized testing<sup>8</sup>.

Results from the survey conducted from 1988 through 1995 indicate that the overall HIV seroprevalence among childbearing women in California has remained relatively stable. Seroprevalence was highest among African American women in 1993, 1994, and 1995. Continuing this trend, seroprevalences among African American women for 1995 were seven times higher than white women.

In 1995, there were 551,226 live births in California. The HIV seroprevalence among childbearing women during the third quarter of 1995 was 0.06471% (88/135,991). Therefore, an estimated 357 ( $551,226 \times 0.06471\%$ ) HIV-infected women gave birth in California in 1995. Assuming a vertical transmission prevalence of 25%, we estimate that approximately 89 ( $.25 \times 357$ ) infants born in California during 1995 could have been infected with HIV.

Results from a placebo-controlled, clinical trial (the AIDS Clinical Trials Group [ACTG] protocol number 076) showed that administration of zidovudine (ZDV) to HIV-infected pregnant women and their newborns reduced the risk of perinatal transmission of HIV by approximately two thirds: 25.5% of infants born to mothers in the placebo group were infected, compared with 8.3% of those born to mothers in the ZDV group<sup>9</sup>. Based on this study, guidelines regarding prenatal HIV screening and ZDV treatment of HIV-infected pregnant women have been formulated by the United States Public Health Service<sup>10</sup>. These guidelines call for health-care providers to counsel HIV-infected pregnant women regarding the ACTG Protocol 076 regimen, and if appropriate, to offer them ZDV therapy between the 14th and 34th week of gestation. If the estimated 357 HIV-infected women and their newborns had received ZDV treatment, and assuming a perinatal transmission prevalence of 8.3%, we estimate that approximately 30 ( $.083 \times 357$ ) infants born in California during 1995 would have been infected with HIV.

In 1995, the Public Health Service (PHS) issued recommendations for HIV counseling and voluntary testing during pregnancy, the use of zidovudine to reduce the risk of perinatal HIV transmission, and prevention of opportunistic infections in infants.<sup>11,12</sup> The major strategies recommended to help prevent perinatal HIV transmission and identifying women and infants in need of care and services included:

1) health care providers should ensure that all pregnant women are routinely counseled and encouraged to be tested for HIV infection; 2) HIV testing of pregnant women and their infants should be voluntary; 3) women should know their HIV status before becoming pregnant; and 4) if the mother's HIV infection status is not known at the time of delivery, she should be encouraged to allow her child to be tested.

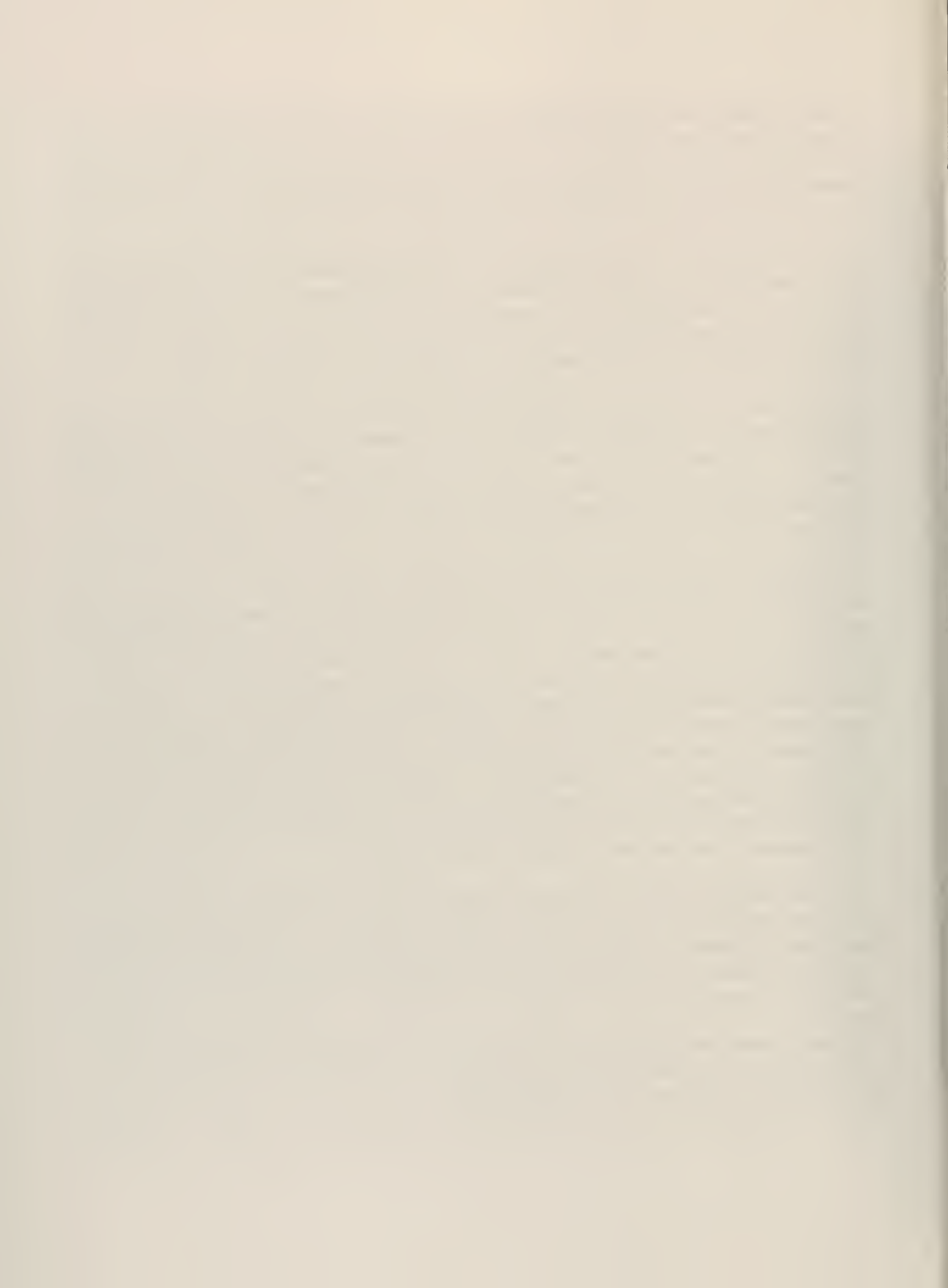
On October 13, 1995, Governor Pete Wilson signed into law Senate Bill (SB) 889, (Chapter 873, Statutes of 1995) which requires prenatal care providers to offer HIV counseling and testing to every pregnant woman during prenatal care. In addition this bill requires prenatal care providers to maintain records documenting the offering of 1) HIV information, 2) counseling, and 3) testing to each pregnant woman.

Since the passage of SB 889, the Office of AIDS, Testing Section, in collaboration with the Health Care Financing Administration (HCFA) will implement a statewide HIV perinatal reduction project. The project will refine the educational materials developed in the Alameda County Prenatal Care Project, develop educational materials in Spanish, and provide prenatal care providers with technical assistance in implementing an HIV education, counseling, and testing program within their clinics.

The current state of affairs prohibits states from conducting HIV serosurveillance and ZDV use in women giving birth with CDC funds. The CDC has prepared a plan for monitoring perinatal HIV infection. As of this date, CDC's proposed plan is being reviewed by the Office of the Secretary, Department of Health and Human Services (DHHS). While this review is being completed, CDC is supporting states' perinatal surveillance activities. In California, we are proposing to conduct two surveys: 1) a linked maternal-infant medical record surveillance to evaluate the implementation of recommended medical care and treatment guidelines for pregnant HIV-infected women; and 2) surveillance of barriers for HIV counseling and testing among pregnant women in selected areas of California to assess compliance with the state's law and U.S. Public Health Service recommendations enacted on HIV counseling and voluntary testing for pregnant women.

As demonstrated by the presentation in this report, in California the survey has become an important resource for planning HIV prevention, developing care and treatment programs, and for designing resource allocation. In California as well as other states, assessment and surveillance are core public health functions and are essential to preventing the spread of any epidemic. Therefore, the California Department of Health Services, California local health departments, and California community-based organizations call for the continuation of the CDC-funded HIV serosurveillance and ZDV use in women giving birth as well as enhanced HIV/AIDS surveillance for pregnant women and children.







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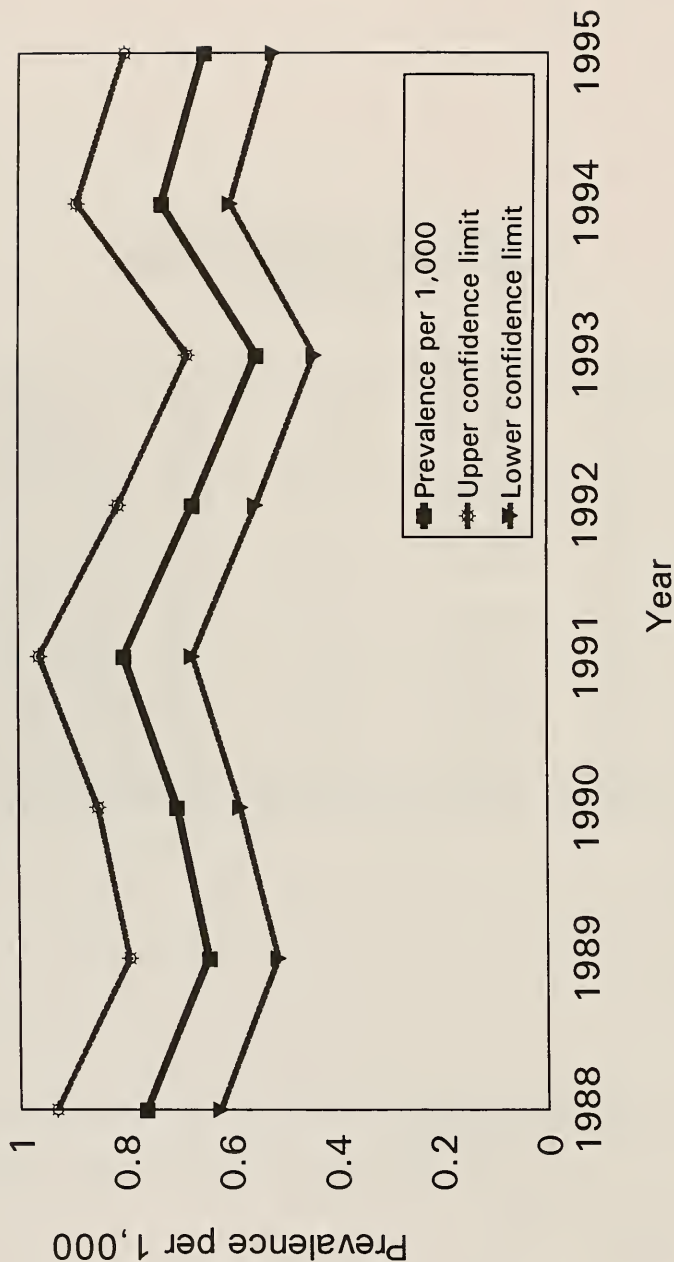
**TABLE 1. HIV SEROPREVALENCE  
IN CALIFORNIA CHILDBEARING WOMEN<sup>1</sup>  
1988 - 1995**

Survey Year	Specimens Tested	Number HIV + <sup>2</sup>	Prevalence per 1,000	95% Confidence Intervals
1988	131,311	100	0.76	(0.62 - 0.93)
1989	139,569	89	0.64	(0.51 - 0.79)
1990	150,494	106	0.70	(0.58 - 0.85)
1991	154,918	124	0.80	(0.67 - 0.96)
1992	151,033	101	0.67	(0.55 - 0.81)
1993	150,598	83	0.55	(0.44 - 0.68)
1994	143,095	105	0.73	(0.60 - 0.89)
1995	135,991	88	0.65	(0.52 - 0.80)

<sup>1</sup>Residual dried-blood specimens collected by heel stick onto filter paper for newborn metabolic screening were tested for HIV antibody, only in the third quarter of each year.

<sup>2</sup>All positive specimens were tested for HIV antibody by enzyme immunoassay and confirmed by Western blot.

**FIGURE 1. HIV SEROPREVALENCES IN CALIFORNIA  
 CHILDBEARING WOMEN  
 1988-1995**



Note: Residual dried-blood specimens collected by heel stick onto filter paper for newborn metabolic screening were tested for HIV antibody, only in the third quarter of each year.

**TABLE 2. HIV SEROPREVALENCE  
IN CALIFORNIA CHILDBEARING WOMEN<sup>1</sup>  
BY RACE/ETHNICITY  
1993-1994-1995**

Race/Ethnicity	Total Tested	1993 Number HIV + <sup>2</sup>	Prevalence per 1,000 / 95% C.I.	Total Tested	1994 Number HIV + <sup>2</sup>	Prevalence per 1,000 / 95% C.I.	Total Tested	1995 Number HIV + <sup>2</sup>	Prevalence per 1,000 / 95% C.I.
White	51,828	12	0.2 (0.12-0.41)	50,889	24	0.5 (0.30-0.70)	44,435	17	0.4 (0.22-0.61)
African American	10,652	29	2.7 (1.82-3.91)	9,828	38	3.9 (2.74-5.30)	8,778	25	2.8 (1.84-4.20)
Latina	72,263	39	0.5 (0.38-0.74)	66,576	38	0.6 (0.40-0.78)	67,570	44	0.7 (0.47-0.87)
Asian	9,918	1	0.1 (0.00-0.56)	9,362	0	0.0	9,316	0	0.0
Other <sup>3</sup>	5,683	2	0.4 (0.00-1.27)	6,342	5	0.8 (0.26-1.84)	5,845	2	0.3 (0.00-1.24)
Unknown	254	0	0.0	98	0	a	47	0	a
<b>Total</b>	<b>150,598</b>	<b>83</b>	<b>0.6</b>	<b>143,095</b>	<b>105</b>	<b>0.7</b>	<b>135,991</b>	<b>88</b>	<b>0.6</b>

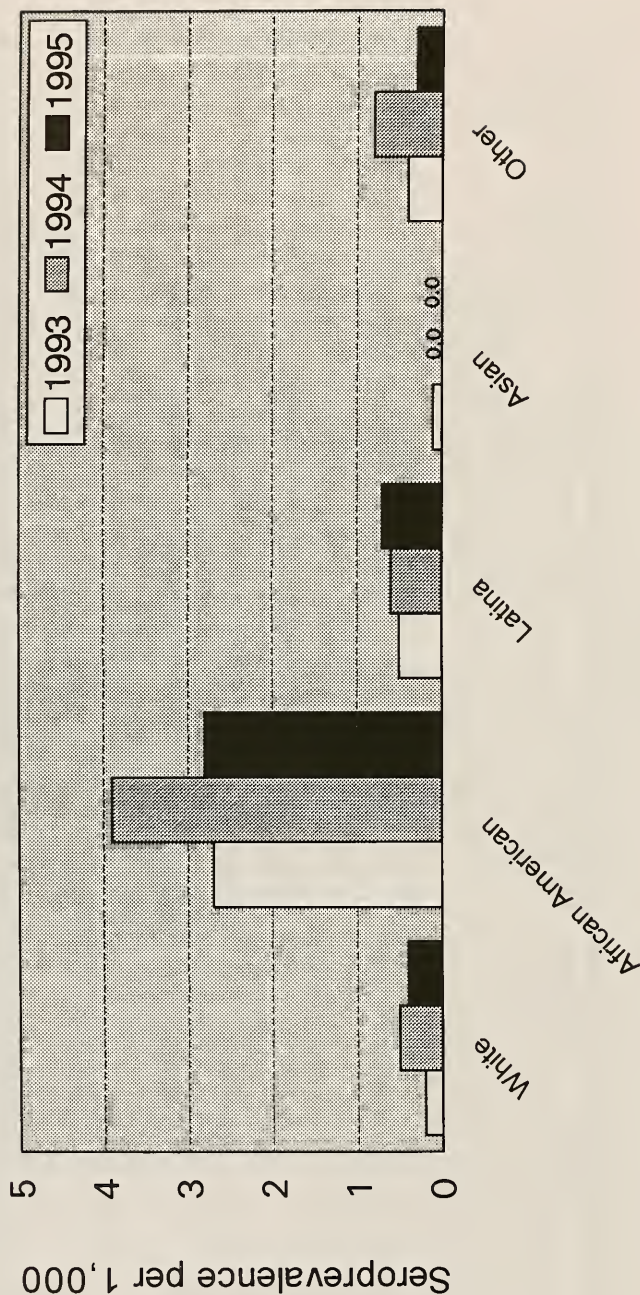
<sup>1</sup>Residual dried blood specimens collected by heel stick onto filter paper for newborn metabolic screening were tested for HIV antibody, only in the third quarter of each year.

<sup>2</sup>All positive specimens were tested for HIV antibody by enzyme immunoassay and confirmed by Western blot.

<sup>3</sup>Includes Native Americans, Pacific Islanders and mixed races.

<sup>4</sup>Not calculated for fewer than 100 tested.

**FIGURE 2. HIV SEROPREVALENCES IN CALIFORNIA  
CHILD BEARING WOMEN, BY RACE/ETHNICITY  
1993-1994-1995**



Notes: The "Other" category includes Native Americans, Pacific Islanders and mixed races. Excludes unknown race/ethnicity. Residual dried-blood specimens collected by heel stick onto filter paper for newborn metabolic screening were tested for HIV antibody, only in the third quarter of each year.

California Department of Health Services  
Office of AIDS, April 1997



**TABLE 3. HIV SEROPREVALENCE  
IN CALIFORNIA CHILDBEARING WOMEN<sup>1</sup>  
BY AGE GROUP  
1993-1994-1995**

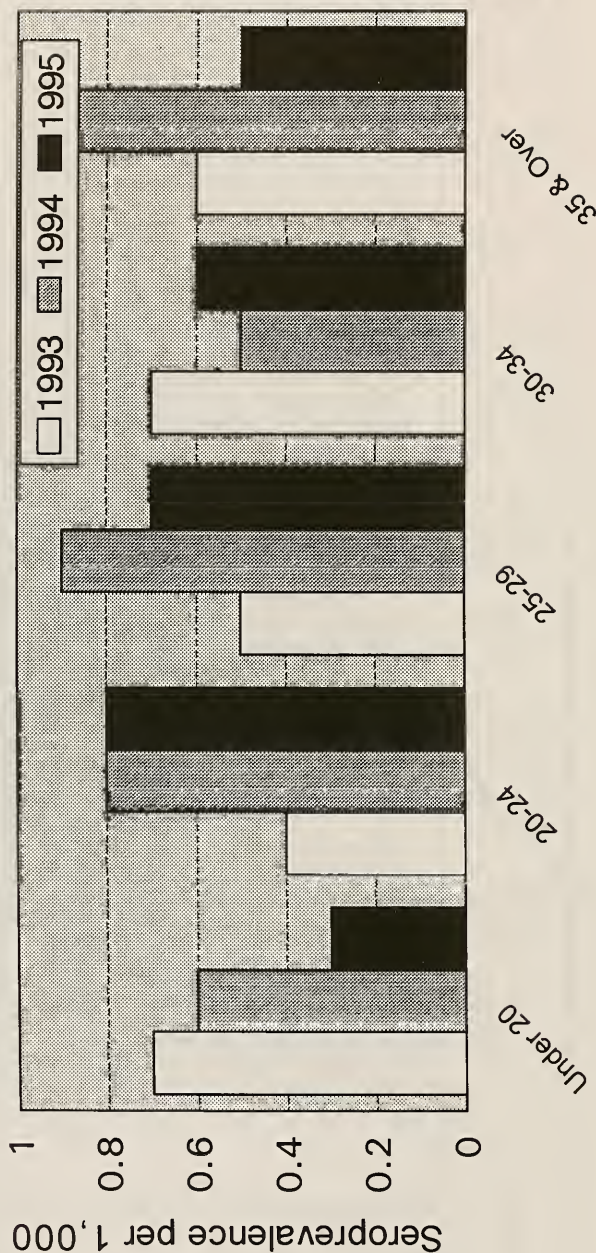
Age Group	1993		1994		1995	
	Total Tested	Number HIV + <sup>2</sup> Prevalence per 1,000 (95% C.I.)	Total Tested	Number HIV + <sup>2</sup> Prevalence per 1,000 (95% C.I.)	Total Tested	Number HIV + <sup>2</sup> Prevalence per 1,000 (95% C.I.)
Under 20	18,276	12 0.7 (0.34-1.15)	18,052	10 0.6 (0.27-1.02)	17,044	5 0.3 (0.00-0.68)
20-24	38,064	17 0.4 (0.26-0.72)	34,603	26 0.8 (0.49-1.10)	32,566	27 0.8 (0.55-1.21)
25-29	41,725	20 0.5 (0.29-0.74)	38,932	36 0.9 (0.65-1.28)	36,353	26 0.7 (0.47-1.05)
30-34	33,655	22 0.7 (0.41-1.00)	32,487	17 0.5 (0.31-0.84)	31,617	20 0.6 (0.39-0.98)
35 & Over	18,092	10 0.6 (0.27-1.00)	18,471	16 0.9 (0.50-1.41)	18,355	10 0.5 (0.26-1.00)
Unknown	786	2 0.3 (0.31-9.16)	550	0 0.0	56	0 0.0
<b>Total</b>	<b>150,598</b>	<b>83</b> <b>0.6</b>	<b>143,095</b>	<b>105</b> <b>0.7</b>	<b>135,991</b>	<b>88</b> <b>0.6</b>

<sup>1</sup>Residual dried-blood specimens collected by heel stick onto filter paper for newborn metabolic screening were tested for HIV antibody, only in the third quarter of each year.

<sup>2</sup>All positive specimens were tested for HIV antibody by enzyme immunoassay and confirmed by Western blot.

**FIGURE 3. HIV SEROPREVALENCES IN CALIFORNIA  
CHILD BEARING WOMEN, BY AGE GROUP**

**1993-1994-1995**



Notes: Excludes unknown age group. Residual dried-blood specimens collected by heel stick onto filter paper for newborn metabolic screening were tested for HIV antibody, only in the third quarter of each year.

California Department of Health Services  
Office of AIDS, April 1997

TABLE 4. HIV SEROPREVALENCE  
IN CALIFORNIA CHILDBEARING WOMEN<sup>1</sup>  
BY COUNTY OF RESIDENCE  
1993-1994-1995

County of Residence	1993			1994			1995		
	Total Tested	Number HIV + <sup>2</sup>	Prevalence per 1,000	Total Tested	Number HIV + <sup>2</sup>	Prevalence per 1,000	Total Tested	Number HIV + <sup>2</sup>	Prevalence per 1,000
Alameda	5,651	4	0.7	5,457	8	1.5	5,304	9	1.7
Alpine	2	0	a	0	0	a	4	0	a
Amador	87	0	a	92	0	a	59	0	a
Butte	688	0	0.0	692	1	1.4	655	0	0.0
Calaveras	95	0	a	95	0	a	99	0	a
Colusa	85	0	a	99	0	a	93	0	a
Contra Costa	3,206	3	0.9	3,154	3	1.0	3,116	1	0.3
Del Norte	81	0	a	89	0	a	79	0	a
El Dorado	388	0	0.0	388	0	0.0	397	0	0.0
Fresno	4,135	1	0.2	3,932	3	0.8	3,810	3	0.8
Glenn	109	0	0.0	126	0	0.0	123	0	0.0
Humboldt	435	0	0.0	394	0	0.0	393	0	0.0
Imperial	839	0	0.0	823	0	0.0	798	0	0.0
Inyo	47	0	a	63	0	a	62	0	a
Kern	3,263	1	0.3	3,186	1	0.3	3,117	2	0.6

TABLE 4. (Continued)

County of Residence	1993			1994			1995		
	Total Tested	Number HIV + <sup>2</sup>	Prevalence per 1,000	Total Tested	Number HIV + <sup>2</sup>	Prevalence per 1,000	Total Tested	Number HIV + <sup>2</sup>	Prevalence per 1,000
Kings	490	0	0.0	504	0	0.0	512	0	0.0
Lake	162	0	0.0	179	0	0.0	193	0	0.0
Lassen	85	0	a	82	0	a	69	0	a
Los Angeles	49,946	34	0.7	46,667	42	0.9	41,989	40	1.0
Madera	558	0	0.0	522	0	0.0	561	0	0.0
Marin	746	0	0.0	716	0	0.0	675	0	0.0
Mariposa	44	0	a	52	0	a	40	0	a
Mendocino	284	0	0.0	270	0	0.0	289	0	0.0
Merced	1,187	1	0.8	1,052	0	0.0	1,061	0	0.0
Modoc	24	0	a	22	0	a	27	0	a
Mono	25	0	a	32	0	a	34	0	a
Monterey	1,778	1	0.6	1,749	0	0.0	1,689	0	0.0
Napa	402	0	0.0	389	0	0.0	373	0	0.0
Nevada	225	0	0.0	179	0	0.0	226	0	0.0
Orange	13,370	6	0.4	12,803	3	0.2	12,778	3	0.2

TABLE 4. (Continued)

County of Residence	1993			1994			1995		
	Total Tested	Number HIV + <sup>2</sup>	Prevalence per 1,000	Total Tested	Number HIV + <sup>2</sup>	Prevalence per 1,000	Total Tested	Number HIV + <sup>2</sup>	Prevalence per 1,000
Placer	624	0	0.0	627	0	0.0	667	0	0.0
Plumas	93	0	a	104	0	0.0	112	0	0.0
Riverside	6,570	2	0.3	6,224	3	0.5	6,246	2	0.3
Sacramento	4,961	5	1.0	4,733	5	1.1	4,626	5	1.1
San Benito	220	0	0.0	189	0	0.0	202	0	0.0
San Bernardino	8,118	4	0.5	7,603	6	0.8	7,582	5	0.7
San Diego	11,742	4	0.3	10,954	9	0.8	10,629	6	0.6
San Francisco	2,435	5	2.1	2,293	4	1.7	2,174	6	2.8
San Joaquin	2,337	1	0.4	2,363	1	0.4	2,263	0	0.0
San Luis Obispo	706	0	0.0	693	0	0.0	648	1	1.5
San Mateo	2,480	0	0.0	2,586	2	0.8	2,533	0	0.0
Santa Barbara	1,677	1	0.6	1,584	1	0.6	1,123	0	0.0
Santa Clara	7,083	4	0.6	6,815	4	0.6	6,716	3	0.4
Santa Cruz	1,017	0	0.0	990	0	0.0	908	0	0.0
Shasta	557	0	0.0	515	0	0.0	528	0	0.0



TABLE 4. (Continued)

County of Residence	1993			1994			1995		
	Total Tested	Number HIV + <sup>2</sup>	Prevalence per 1,000	Total Tested	Number HIV + <sup>2</sup>	Prevalence per 1,000	Total <sup>b</sup> Tested	Number HIV + <sup>2</sup>	Prevalence per 1,000
Sierra	8	0	a	8	0	a	3	0	a
Siskiyou	107	0	0.0	81	0	a	91	0	a
Solano	1,449	1	0.7	1,333	1	0.8	1,284	0	0.0
Sonoma	1,407	2	1.4	1,398	0	0.0	1,368	0	0.0
Stanislaus	1,904	1	0.5	1,807	3	1.7	1,836	1	0.5
Sutter	299	0	0.0	333	0	0.0	299	0	0.0
Tehama	181	0	0.0	181	0	0.0	170	0	0.0
Trinity	38	1	a	38	0	a	32	0	0.0
Tulare	1,981	0	0.0	1,871	2	1.1	1,859	0	0.0
Tuolumne	119	0	0.0	128	0	0.0	142	0	0.0
Ventura	3,125	0	0.0	2,946	1	0.3	2,465	1	0.4
Yolo	624	1	1.6	595	2	3.4	553	0	0.0
Yuba	299	0	0.0	295	0	0.0	304	0	0.0
Total	150,598	83	0.6	143,09	105	0.7	135,991	88	0.6

<sup>1</sup>Residual dried-blood specimens collected by heel stick onto filter paper for newborn metabolic screening were tested for HIV antibody, only in the third quarter of each year.

<sup>2</sup>All positive specimens were tested for HIV antibody by enzyme immunoassay and confirmed by Western blot.

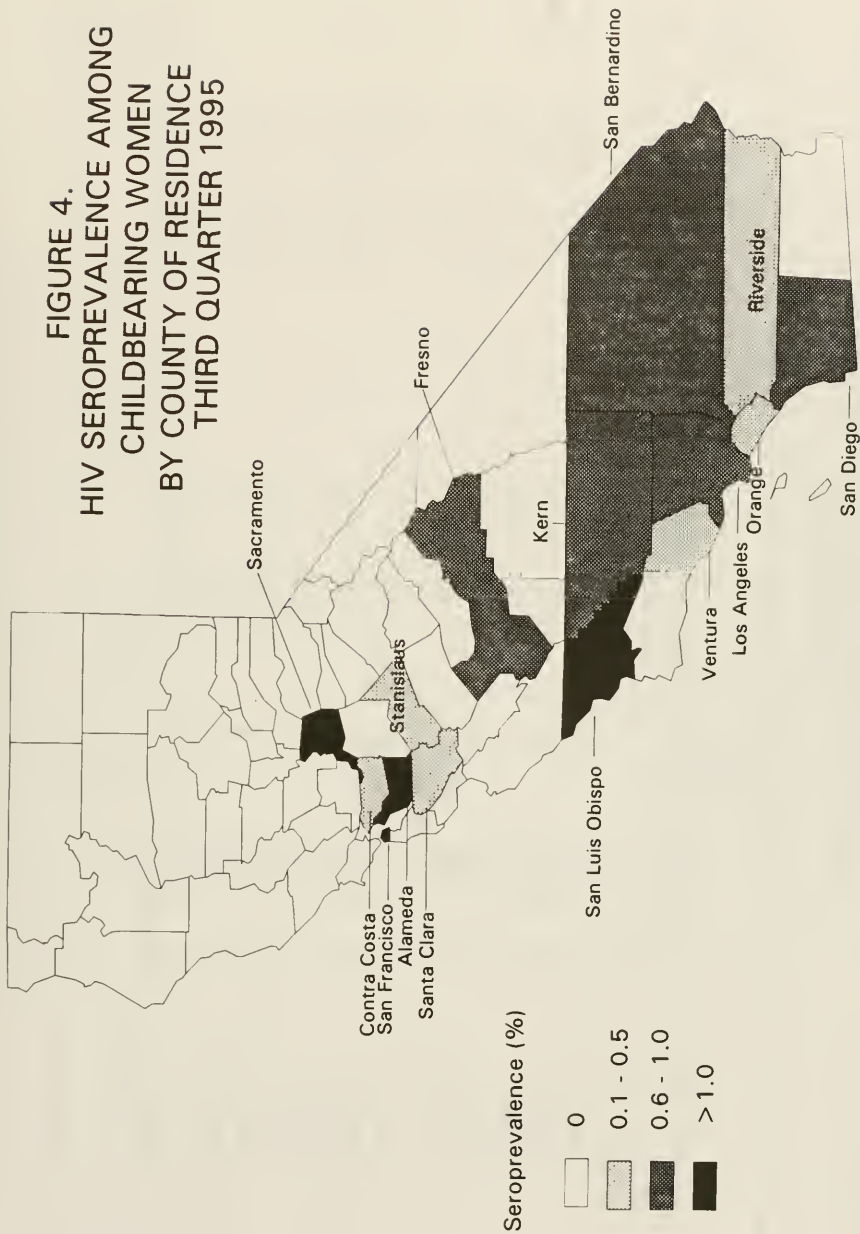
\*Not calculated for fewer than 100 tested.

<sup>b</sup>Numbers may not add up to total as there were three cases with unknown county.

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FIGURE 4.  
HIV SEROPREVALENCE AMONG  
CHILDBEARING WOMEN  
BY COUNTY OF RESIDENCE  
THIRD QUARTER 1995



**TABLE 5. HIV SEROPREVALENCE  
IN CALIFORNIA CHILDBEARING WOMEN<sup>1</sup>  
BY REGIONS, RACE/ETHNICITY AND AGE GROUP  
1993-1994-1995**

Region	Race/Ethnicity Age Group	1993		1994		1995	
		Total Tested	Prevalence per 1,000 HIV + <sup>2</sup>	Total Tested	Prevalence per 1,000 HIV + <sup>2</sup>	Total Tested	Prevalence per 1,000 HIV + <sup>2</sup>
Los Angeles County	White	10,032	0.3	11,362	0.7	7,542	0.7
	African American	4,730	2.1	4,330	3.5	3,688	2.7
	Latina	30,699	0.7	26,623	0.7	26,820	0.9
	Asian	3,082	0.3	2,841	0.0	2,653	0.0
	Other <sup>5</sup>	1,336	0.0	1,473	0.0	1,283	0.8
	Unknown	67	a	38	a	3	a
	Under 20	6,164	0.5	5,958	0.2	5,365	0.4
	20-24	12,724	0.6	11,614	0.7	10,331	1.2
	25-29	13,847	0.9	12,813	1.2	11,395	1.1
	30-34	10,804	0.9	10,049	0.8	9,313	0.9
	35 & Over	6,119	0.3	6,034	1.5	5,577	0.9
	Unknown	288	0.0	199	0.0	8	a
	Total	49,946	0.7	46,667	0.9	41,989	1.0

TABLE 5. (Continued)

Region	Race/Ethnicity Age Group	1993			1994			1995		
		Total Tested	Number HIV + <sup>2</sup>	Prevalence per 1,000	Total Tested	Number HIV + <sup>2</sup>	Prevalence per 1,000	Total Tested	Number HIV + <sup>2</sup>	Prevalence per 1,000
San Francisco County	White	717	2	2.8	611	1	1.6	587	2	3.4
	African American	316	1	3.2	279	3	10.8	222	2	9.0
	Latina	590	2	3.4	591	0	0.0	598	2	3.3
	Asian	661	0	0.0	652	0	0.0	602	0	0.0
	Other <sup>5</sup>	148	0	0.0	159	0	0.0	165	0	0.0
	Unknown	3	0	a	1	0	a	0	0	a
	Under 20	170	1	5.9	186	0	0.0	181	0	0.0
	20-24	446	0	0.0	397	0	0.0	349	1	2.9
	25-29	662	1	1.5	593	2	3.4	532	1	1.9
	30-34	677	2	3.0	689	0	0.0	658	3	4.6
	35 & Over	466	1	2.1	417	2	4.8	454	1	2.2
	Unknown	14	0	a	11	0	a	0	0	a
Total		2,435	5	2.1	2,293	4	1.7	2,174	6	2.8

TABLE 5. (Continued)

Region	Race/Ethnicity Age Group	1993			1994			1995		
		Total Tested	Number HIV + <sup>2</sup>	Prevalence per 1,000	Total Tested	Number HIV + <sup>2</sup>	Prevalence per 1,000	Total Tested	Number HIV + <sup>2</sup>	Prevalence per 1,000
Other Bay Area Counties <sup>3</sup>	White	9,634	1	0.1	9,108	2	0.2	8,802	2	0.2
	African American	2,125	10	4.7	1,924	12	6.2	1,750	5	2.9
	Latina	6,725	3	0.4	6,767	3	0.4	6,746	6	0.9
	Asian	2,399	0	0.0	2,353	0	0.0	2,504	0	0.0
	Other <sup>5</sup>	1,492	0	0.0	1,674	1	0.6	1,549	0	0.0
	Unknown	49	0	a	22	0	a	18	0	a
	Under 20	2,053	5	2.4	1,984	2	1.0	1,950	0	0.0
	20-24	4,590	3	0.7	4,284	5	1.2	4,136	5	1.2
	25-29	6,119	1	0.2	5,821	7	1.2	5,511	4	0.7
	30-34	6,065	2	0.3	6,075	2	0.3	6,032	3	0.5
25	35 & Over	3,440	1	0.3	3,596	2	0.6	3,734	1	0.3
	Unknown	157	2	1.3	88	0	a	6	0	a
	Total	22,424	14	0.6	21,848	18	0.8	21,369	13	0.6

TABLE 5. (Continued)

Region	Race/Ethnicity Age Group	1993			1994			1995		
		Total Tested	Number HIV + <sup>2</sup>	Prevalence per 1,000	Total Tested	Number HIV + <sup>2</sup>	Prevalence per 1,000	Total Tested	Number HIV + <sup>2</sup>	Prevalence per 1,000
San Diego County	White	4,798	1	0.2	4,239	2	0.5	4,044	2	0.5
	African American	729	1	1.4	678	0	0.0	615	1	1.6
	Latina	5,185	1	0.2	4,914	6	1.2	4,861	3	0.6
	Asian	558	0	0.0	577	0	0.0	610	0	0.0
	Other <sup>5</sup>	466	1	2.1	535	1	1.9	499	0	0.0
	Unknown	6	0	a	11	0	a	0	0	a
	Under 20	1,290	1	0.8	1,236	2	1.6	1,143	0	0.0
	20-24	3,030	0	0.0	2,665	4	1.5	2,534	2	0.8
	25-29	3,295	0	0.0	3,012	2	0.7	2,912	1	0.3
	30-34	2,717	1	0.4	2,630	0	0.0	2,568	2	0.8
	35 & Over	1,390	2	1.4	1,387	1	0.7	1,471	1	0.7
	Unknown	20	0	a	24	0	a	1	0	a
	Total	11,742	4	0.3	10,954	9	0.8	10,629	6	0.6

TABLE 5. (Continued)

Region	Race/Ethnicity Age Group	1993			1994			1995		
		Total Tested	Number HIV + <sup>2</sup>	Prevalence per 1,000	Total Tested	Number HIV + <sup>2</sup>	Prevalence per 1,000	Total Tested	Number HIV + <sup>2</sup>	Prevalence per 1,000
Southern Metropolitan Counties <sup>4</sup>	White	10,960	1	0.1	9,959	2	0.2	9,381	5	0.5
	African American	1,322	2	1.5	1,220	6	4.9	1,176	1	0.9
	Latina	13,423	9	0.7	13,149	4	0.3	13,737	4	0.3
	Asian	1,319	0	0.0	1,305	0	0.0	1,283	0	0.0
	Other <sup>5</sup>	984	0	0.0	986	0	0.0	1,022	0	0.0
	Unknown	50	0	0.0	11	0	a	7	0	a
	Under 20	3,289	1	0.3	3,277	1	0.3	3,273	1	0.3
	20-24	7,344	4	0.5	6,641	3	0.5	6,485	3	0.5
	25-29	8,178	3	0.4	7,543	3	0.4	7,422	4	0.5
	30-34	6,188	2	0.3	5,950	4	0.7	6,165	2	0.3
27	35 & Over	2,961	2	0.7	3,136	1	0.3	3,237	0	0.0
	Unknown	98	0	0.0	83	0	a	24	0	a
	Total	28,058	12	0.4	26,630	12	0.5	26,606	10	0.4



TABLE 5. (Continued)

Region	Race/Ethnicity Age Group	1993		1994		1995	
		Total Tested	Prevalence per 1,000	Total Tested	Prevalence per 1,000	Total Tested	Prevalence per 1,000
Rest of California	White	15,687	0.3	15,610	0.6	14,079	0.1
	African American	1,430	3.5	1,397	1.4	1,327	4.5
	Latina	15,641	0.3	14,532	0.4	14,808	0.3
	Asian	1,899	0.0	1,634	0.0	1,664	0.0
	Other <sup>5</sup>	1,257	0.8	1,515	2.0	1,327	0.8
	Unknown	79	a	15	a	19	a
	Total	35,993	0.4	34,703	0.6	33,224	0.4
28	Under 20	5,310	0.2	5,411	0.7	5,132	0.4
	20-24	9,930	0.3	9,002	0.7	8,731	0.5
	25-29	9,624	0.3	9,150	0.7	8,581	0.3
	30-34	7,204	0.7	7,094	0.4	6,881	0.3
	35 & Over	3,716	0.5	3,901	0.3	3,882	0.5
	Unknown	209	0.0	145	0.0	17	a
	Total	35,993	0.4	34,703	0.6	33,224	0.4

<sup>1</sup>Residual dried-blood specimens collected by heel stick onto filter paper for newborn metabolic screening were tested for HIV antibody, only in the third quarter of each year.

<sup>2</sup>All positive specimens were tested for HIV antibody by enzyme immunoassay and confirmed by Western blot.

<sup>3</sup>Alameda, Contra Costa, Marin, Napa, San Mateo, Santa Clara, Solano, and Sonoma counties.

<sup>4</sup>Orange, Riverside, and San Bernardino counties.

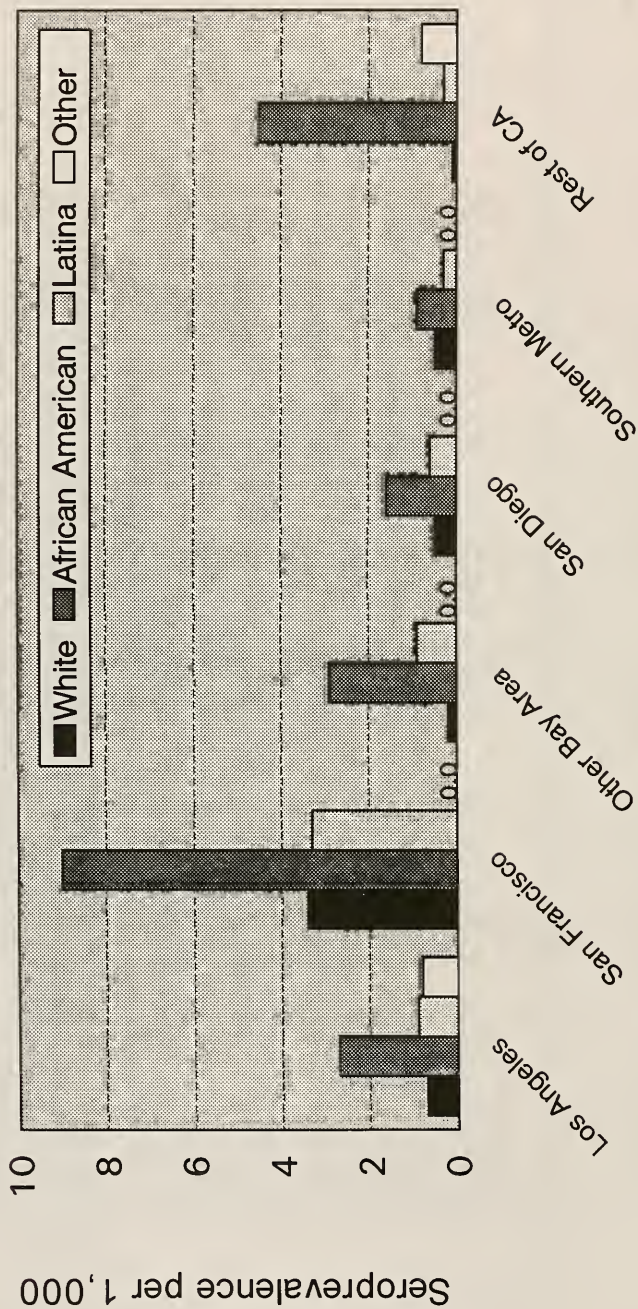
<sup>5</sup>Includes Native Americans, Pacific Islanders and mixed races.

<sup>\*</sup>Not calculated for fewer than 100 tested

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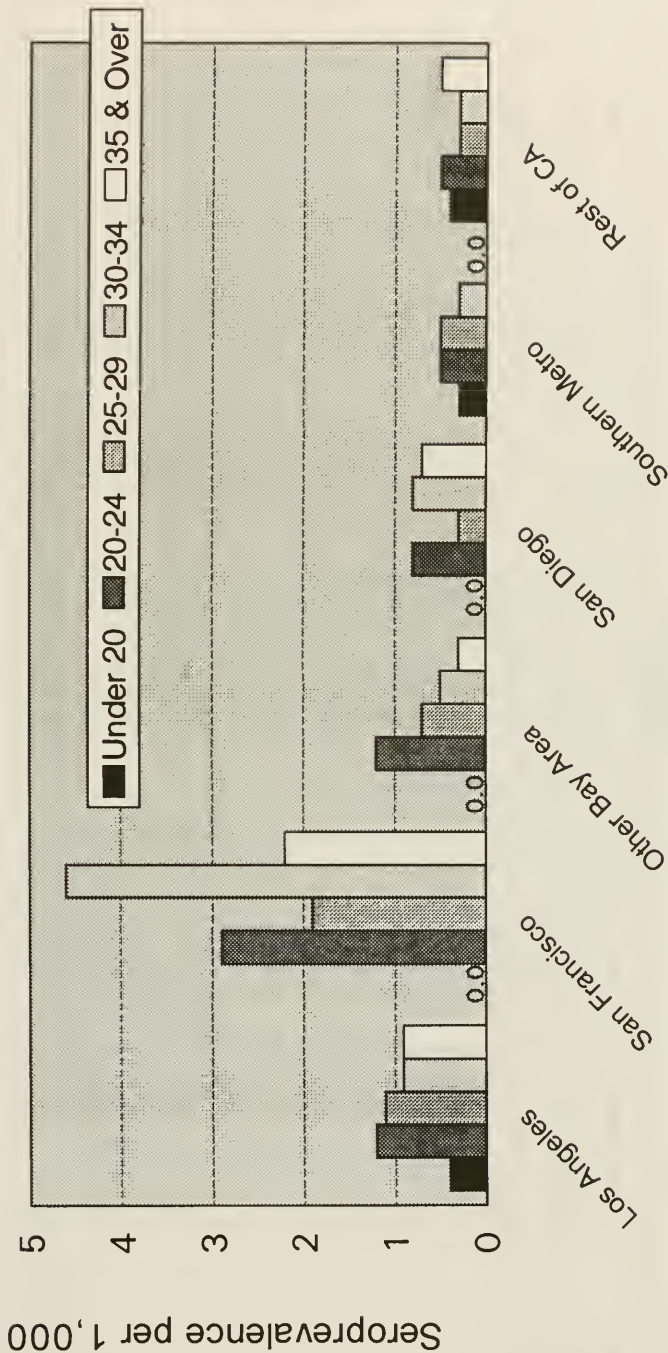
**FIGURE 5. HIV SEROPREVALENCES IN CALIFORNIA  
 CHILDBEARING WOMEN, BY REGIONS AND RACE/ETHNICITY  
 1995**



Notes: The "Other" category includes Native Americans, Pacific Islanders and mixed races. Excludes Asian and unknown race/ethnicity. Residual dried-blood specimens collected by heel stick onto filter paper for newborn metabolic screening were tested for HIV antibody, only in the third quarter of each year.

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**FIGURE 6. HIV SEROPREVALENCES IN CALIFORNIA  
 CHILDBEARING WOMEN, BY REGIONS AND AGE GROUP  
 1995**



Notes: Excludes unknown age group. Residual dried-blood specimens collected by heel stick onto filter paper for newborn metabolic screening were tested for HIV antibody, only in the third quarter of each year.



**TABLE 6. HIV SEROPREVALENCE  
IN CALIFORNIA CHILDBEARING WOMEN<sup>1</sup>  
BY URBAN/NON-URBAN REGIONS, RACE/ETHNICITY AND AGE GROUP  
1993-1994-1995**

Urban/ Non-Urban Regions	Race/Ethnicity and Age Group of Mother	1993		1994		1995	
		Total Tested	Prevalence per 1,000	Total Tested	Prevalence per 1,000	Total Tested	Prevalence per 1,000
Urban <sup>3</sup>	White	35,151	7	34,874	17	29,615	14
	African American	8,882	26	8,127	33	7,148	22
	Latina	54,558	31	49,499	32	50,121	38
	Asian	8,177	1	7,888	0	7,864	0
	Other <sup>5</sup>	4,375	2	4,878	2	4,477	2
	Unknown	172	0	82	0	26	0
	Under 20	12,461	10	12,157	5	11,279	3
	20-24	27,080	12	24,640	22	22,846	23
	25-29	31,155	18	28,884	30	26,751	23
	30-34	25,901	18	24,901	12	24,147	17
	35 & Over	14,155	7	14,386	15	14,198	10
	Unknown	563	2	380	0	30	0
	Total	111,315	67	105,348	84	99,251	76
			0.6		0.8		0.8

TABLE 6. (Continued)

Urban/ Non-Urban Regions	Race/Ethnicity and Age Group of Mother	1993 Total Tested	1993 Number HIV + <sup>2</sup>	Prevalence per 1,000	Total Tested	1994 Number HIV + <sup>2</sup>	Prevalence per 1,000	Total Tested	1995 Number HIV + <sup>2</sup>	Prevalence per 1,000
Non-Urban <sup>4</sup>	White	16,677	5	0.3	16,015	7	0.4	14,820	3	0.2
	African American	1,770	3	1.7	1,701	5	2.9	1,630	3	1.8
	Latina	17,705	8	0.5	17,077	6	0.4	17,449	6	0.3
	Asian	1,741	0	0.0	1,474	0	0.0	1,452	0	0.0
	Other <sup>5</sup>	1,308	0	0.0	1,464	3	2.0	1,368	0	0.0
	Unknown	82	0	a	16	0	a	21	0	a
	Under 20	5,815	2	0.3	5,895	5	0.8	5,765	2	0.3
	20-24	10,984	5	0.5	9,963	4	0.4	9,720	4	0.4
	25-29	10,570	2	0.2	10,048	6	0.6	9,602	3	0.3
	30-34	7,754	4	0.5	7,586	5	0.7	7,470	3	0.4
	35 & Over	3,937	3	0.8	4,085	1	0.2	4,157	0	0.0
	Unknown	223	0	0.0	170	0	0.0	26	0	a
	Total	39,283	16	0.4	37,747	21	0.6	36,740	12	0.3

<sup>1</sup>Residual dried-blood specimens collected by heel stick onto filter paper for newborn metabolic screening were tested for HIV antibody, only in the third quarter of each year.

<sup>2</sup>All positive specimens were tested for HIV antibody by enzyme immunoassay and confirmed by Western blot.

<sup>3</sup>Alameda, Contra Costa, Los Angeles, Marin, Orange, Riverside, Sacramento, San Diego, San Francisco, San Mateo, Santa Clara, and Ventura counties.

<sup>4</sup>Remaining counties.

<sup>5</sup>Includes Native Americans, Pacific Islanders and mixed races.

<sup>\*</sup>Not calculated for fewer than 100 tested.

**FIGURE 7. HIV SEROPREVALENCES IN CALIFORNIA CHILDBEARING WOMEN, BY URBAN/NON-URBAN REGIONS AND RACE/ETHNICITY**

**1995**

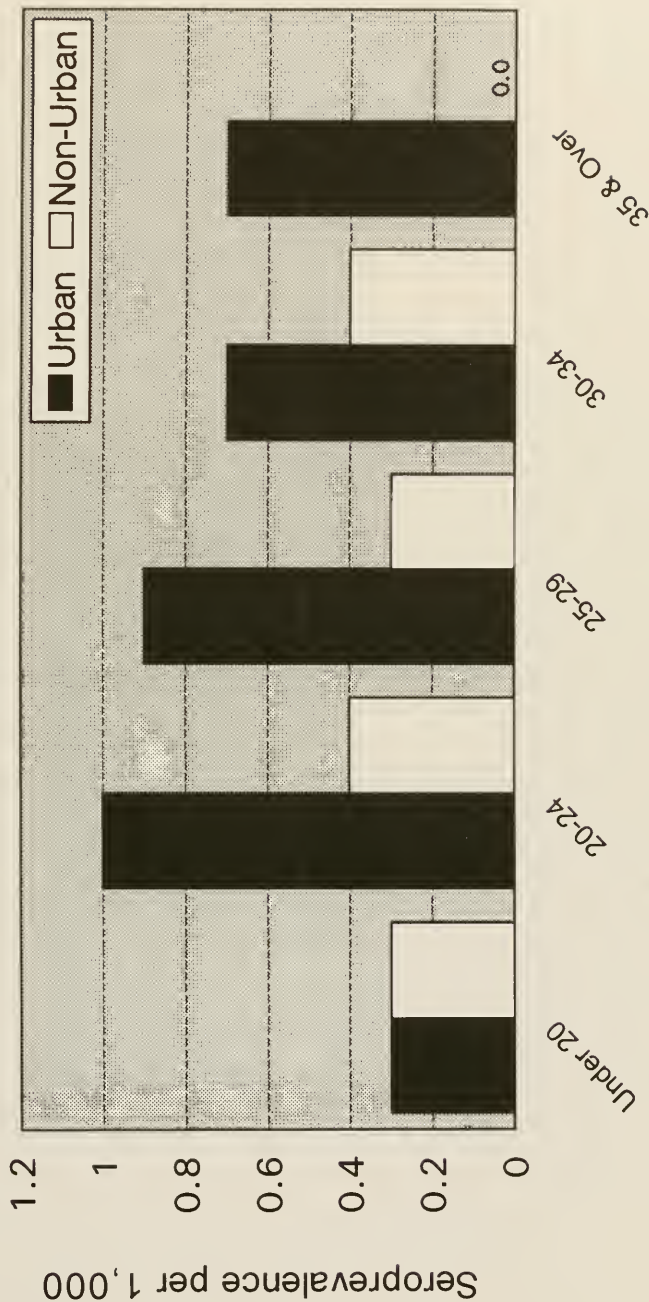


Notes: The "Other" category includes Native Americans, Pacific Islanders and mixed races. Excludes unknown race/ethnicity. Residual dried-blood specimens collected by heel stick onto filter paper for newborn metabolic screening were tested for HIV antibody, only in the third quarter of each year.

California Department of Health Services  
Office of AIOS, April 1997



**FIGURE 8. HIV SEROPREVALENCES IN CALIFORNIA CHILDBEARING WOMEN BY URBAN/NON-URBAN REGIONS AND AGE GROUP 1995**



Notes: Excludes unknown age group. Residual dried-blood specimens collected by heel stick onto filter paper for newborn metabolic screening were tested for HIV antibody, only in the third quarter of each year.

